

Heritage: Care and Development





Document Verification



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December 2020

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How to use this document



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Section 1 Introduction:

Summary of the document and direction on implementing the following guidance.



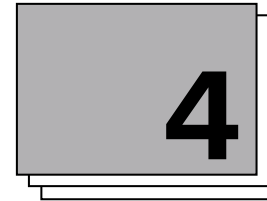
Section 2 Understanding the Network Rail Estate:

Architectural and historical overview of Network Rail's stations and structures.



Section 3 Planning and the Legal Context:

Advice for producing planning and listed building consent applications and recommended consultation with authorities and stakeholders.



Section 4 Project Planning and Management:

Outlining the necessary responsibilities, duties and understanding required to achieve project realisation.



Section 5 Design Considerations:

Considerations to undertake for good practice in the maintenance and development.



Section 6 Existing Elements:

General guidance on the approach to repairs and building work on the more common station building elements, and where problems have been experienced.



Section 7 Maintenance & End of Life:

Advice on maintenance considerations and good practice, and what to do when a structure has reached the end of its life, and a new use cannot be found or it cannot be repaired.



Appendices A–D:

- Definitions
- Legislation and Guidance
- Image Credits
- Processes
- Useful Contacts
- Awards
- Case Studies

Hint and tips:

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To return to the contents page you can click on the Double Arrow symbol.

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Click on this symbol to navigate to the section indicated.

How to use the guidance

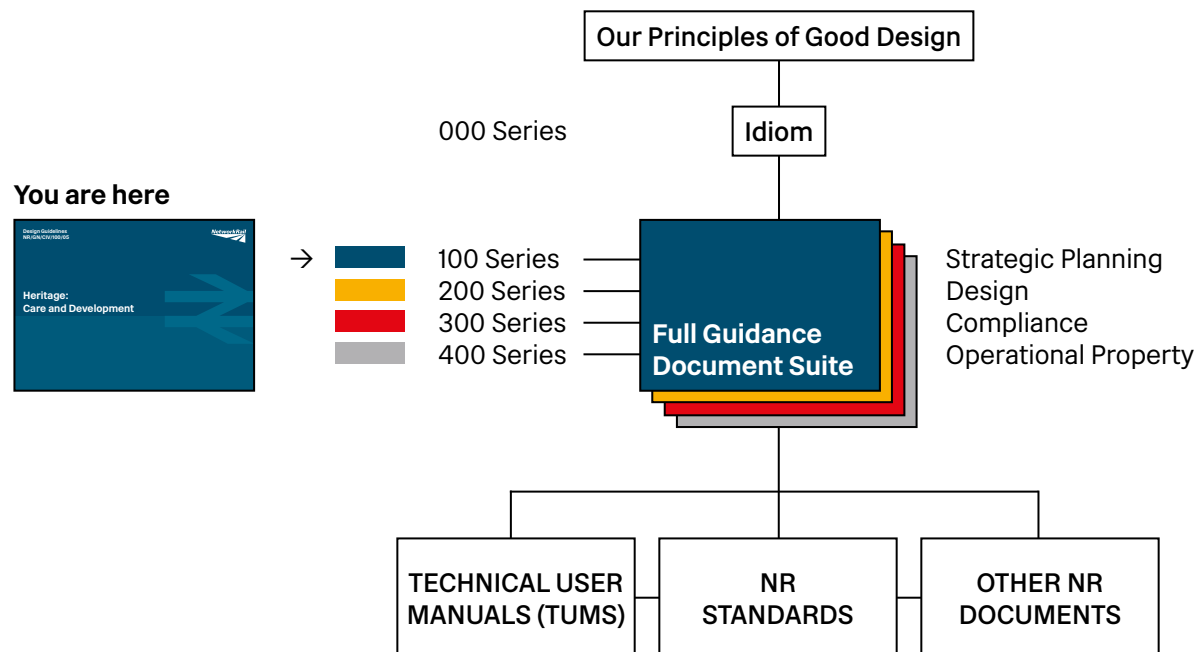


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The Network Rail Document Suite



This guidance has a Network Rail standards Green status, and the contents do not require a variation

A full list of relevant documents, and other guidance suite documents is contained in the appendix.

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Image 0.1
Bournemouth station,
Grade II listed



Heritage
Introduction





Image 1.1
Glasgow Central station concourse,
Category A listed

Purpose and Scope

Network Rail owns and manages an operational infrastructure of significant historic and architectural importance in an international arena.

This document provides practical guidance to the legislative framework which, in the national interest, protects the unique qualities of the historic estate and also provides advice as to how best to maintain it in the appropriate condition that is related to its operational functionality and cultural importance.

Historical overview **Section 2**

The guide begins by giving a brief history of the Network Rail estate in order to highlight the cultural significance of the different types of buildings and structures in its ownership. This information is included to clarify how the proposed interventions can be considered in the correct context.

Legislative framework **Section 3**

The guide proceeds to describe the legislation and consents framework protecting Listed Buildings, buildings within a Conservation Area, Scheduled Monuments, Tree Preservation Orders and Areas of Archaeological Interest. It also suggests appropriate time-scales to anticipate when planning projects should allow the necessary discussions with the concerned parties.

Design guidance **Section 4**

The guide then deals with design issues and offers general guidance for historic fabric focussing particularly on stations and new elements such as platform paving, roof canopies, fixtures, fittings and services. Additional guidance is given to cover the care and long-term maintenance of the building fabric.

Supporting information **Appendix**

Useful information is contained in a series of appendices, along with project case studies.



Image 1.2
Bury St Edmunds station,
Grade II listed

The guidance in this document represents Network Rail's commitment to the heritage in its care.

Although focussed primarily on listed buildings in the Network Rail estate, the advice in the Guide is of equal relevance to buildings in conservation areas and to other listed or historically valuable structures such as bridges and viaducts, which merit a similar level of care.

1.1.1 Advice to Staff, Projects and Contractors

The Guide is intended for use by all Station Managers, Route Asset Managers (RAMs), Train Operating Companies (TOCs), lessees, tenants and occupiers and by anyone designing or carrying out works on the network, to confirm there is consistency in the way the heritage estate is managed and maintained.

The Guide sets out principles describing 'good practice' and offers 'direction based on experience' to illustrate how the choice of materials, well thought out interventions and intelligently developed proposals can enhance the value of a historic structures and have a positive effect on its operational performance and appearance. London King's Cross and the Royal Border Bridge at Berwick are good examples of how contemporary work can sit well within historic fabric to the benefit of both parts.

1.1.2 Support for consultation and applications

The guide is also intended as prior information before approaching the local planning authority (city, borough or district), the statutory national heritage bodies (Historic England, Historic Environment Scotland and Cadw) and other bodies consulted during the planning process (such as the Victorian Society, the Twentieth Century Society and local archaeological services).

Its purpose is briefly to inform and advise all those having a railway heritage property within their control and care:

- of the basic town planning and legal framework protecting a listed building or a building within a conservation area
- of the duty to consult with heritage experts, consultants and the local planning authority at an early stage in the project
- of the legal requirement to obtain formal consents in advance of commencing any works,
- of the duty to guide works in a way sympathetic to the heritage context whilst simultaneously meeting current railway operational and commercial needs
- of the duty to undertake works in a way that protects the long-term value of the premises or structure

It is not the aim of this Guide to provide exhaustive instructions or comprehensive specifications for the conservation of listed buildings and structures — these can be found elsewhere and tailored appropriately.

1.1.3 Pointers to further information

The appendices give points of contact within Network Rail and list publications available from a variety of sources that should be consulted as necessary for further legislative and technical guidance.

A glossary is not provided but readers might wish to refer to the Historic England Definitions referenced in Appendix A.

To assist sponsors, project managers, engineers and contractors in de-risking the heritage aspects of a project and its programme, a project checklist is included as Appendix B. Together with the co-located planning process diagram, this checklist is to be used to confirm that the right steps are specified and undertaken at the appropriate GRIP stage.

In all cases, at an early stage (prior to GRIP 3) one should consult with the Network Rail architects and route town planners listed in Appendix C.



Refer to:
Project Manager's Heritage Checklist

Introduction

1.2 Background

1.2.1 The Network Rail Estate

Network Rail owns and manages a unique and historically important estate and infrastructure. As the birthplace of railways and of many subsequent innovations, the system in Great Britain retains many features of international significance.

Network Rail is among the largest land and property owners in the UK and ranks in importance alongside the Church of England, the Ministry of Defence, the Crown Estate and the National Trust. Network Rail is, however, different in that its buildings and structures are intrinsic parts of our national infrastructure, where heavy physical wear and tear are exacted on every part of the estate and its infrastructure.

Unlike most owners of historic structures, Network Rail is expected to provide up-to-date facilities to enable a largely 19th century network to function as a 21st century railway.

1.2.2 Ownership and management

The UK railway system currently comprises a number of independent Train Operating Companies (TOCs) and Freight Operating Companies (FOCs) with trains and rolling stock run over infrastructure that is owned, managed and maintained by Network Rail.

The 'operational property' elements within the Network Rail building portfolio are maintained by designated 'asset stewards' although day-to-day management and care rests with the leaseholder or tenant. The exceptions to this are the 'Managed Stations' where Network Rail is both owner and manager.

1.2.3 Character and significance

The geographical distribution of Network Rail's historic infrastructure is widespread. Most of it dates to the 19th century, and all styles of architecture and engineering are reflected in all manner and size of buildings and structures.

In many cases, the early railway companies pioneered new styles and concepts, particularly in creating large-span structures, train sheds and long-span bridges. Often these make a significant contribution to the landscape or urban area in which they sit and, as such, the buildings and structures have a value beyond their intrinsic worth.

The international significance of the UK rail network is widely acknowledged. The Forth Railway Bridge was inscribed as a World Heritage Site by UNESCO in 2015 and elsewhere railways are an important contributor to other World Heritage Sites, such as the Great Western in Sydney Gardens, Bath or the Midland Main Line in the Derwent Valley.

Introduction

1.2 Background



1.2.4 Listed buildings and structures

Recognition of the architectural, historical and cultural significance of the estate has resulted in a large number of Network Rail's buildings being protected by law through the process of 'listing', by scheduling as a monument or by designation of a conservation area or other area of special interest. Of the overall total of over 580,000 listed buildings in the UK, over 1,400 are railway buildings and structures.

Listed buildings are classified by grade to show their relative importance. These grades are explained in more detail in Section 3.3

Recognition of the importance attached to a particular building or structure and complete understanding of what is meant by listing, scheduling and conservation areas, is fundamental to the care and development of Network Rail's architectural and engineering heritage. It is hoped that this Guide helps facilitating that new works are carried out in a way which respects what is significant about the original building or structure whilst satisfying the operational requirements of the present and aspirations for the future.

Image 1.3
Nottingham station, 1904
reconstruction, Grade II*

Almost all works to listed buildings and structures might require listed building consent. To carry out unauthorised works to a listed building is a criminal offence, for which owners could be prosecuted and fined.

All works to listed, protected or otherwise sensitive historic structures should be undertaken by suitably qualified professionals with expertise in this field.

Network Rail is a Central Government body and it therefore follows the Protocol for the Care of the Government Historic Estate (published online by Historic England). The Government is committed to setting a good example in the care of its historic estate and to this end the Protocol sets out a consistent, coordinated approach to protecting all heritage assets through procurement, estate management (maintenance, repair and alteration) and disposal procedures.

The Railway Heritage Trust (RHT) is able to offer advice and provide grants to improve the heritage features of buildings and structures that are listed or within conservation areas. They can also help find new uses for such buildings and structures when they no longer have operational use on the railway. Further details on the RHT can be found in the Appendix.

Heritage
Understanding the Network Rail Estate





Image 2.1
The Forth Bridge,
Category A listed



The Network Rail Estate



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The assets of Network Rail, include 32,000 kilometres of track and associated signalling and electrical control equipment providing a network of more than 16,000 route kilometres, 40,000 bridges, tunnels and viaducts, 8,000 level crossings, 2,500 stations, 90 light maintenance depots and connections to over 1,000 freight terminals.

Buildings around the Network Rail estate survive from all periods of the railway's history and more than 1,450 items are listed as being of architectural or historic interest — including over 380 station buildings, 639 viaducts and bridges, 65 tunnels, 67 signal boxes, 4 hotels, 40 memorials, gates and clocks and over 250 other buildings or structures.

Network Rail owns buildings and structures within all categories of 'listing' as scheduled in the Introduction, although most fall into the Grade II or Category C band. Some examples of structures falling within Grade I or Category A are London Paddington Station, London King's Cross Station, Bristol Temple Meads Station, Glasgow Central Station and the Forth Bridge. The number of buildings listed should not be thought of as static because architectural periods, styles and technical innovations are continually being re-assessed and additions are regularly made to the lists.

The Network Rail Route Town Planning teams should be consulted for the most up-to-date information.



Image 2.2

Downham Market, 1846 Grade II listed.
Refurbished 2017 to commemorate Network South East

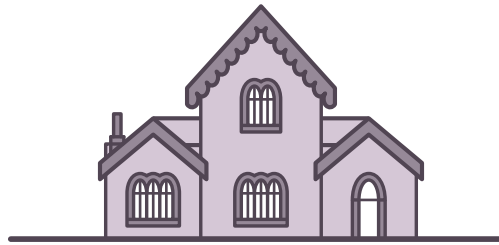
Understanding the Network Rail Estate

2.1 History

The infrastructure now owned by Network Rail and for which it has responsibility was built or acquired from the early 19th century onwards, although a few buildings date from earlier times periods where, for example, the assets of a canal company were purchased. From its beginning in the 1830s, the massive growth in railway construction meant that by the 1860s the railway map of the UK contained the majority of main lines that are still in use today.

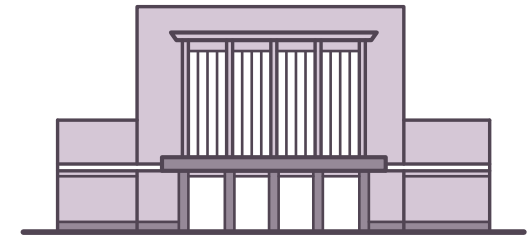
Through a process of change and modernisation, the railway estate continued to develop, mainly piecemeal, but often through concerted programmes of activity. In the 1930s financial incentives were offered to modernise the railways and many stations were rebuilt. Many other were badly damaged during the Second World War

Significant changes took place after nationalisation in 1948: rationalisation, which caused the closure of much of the network, and modernisation of the remaining lines. Route modifications and the installation of electrification equipment took place from the 1960s onward. During this period many stations were rebuilt for Coventry and Harlow Town.



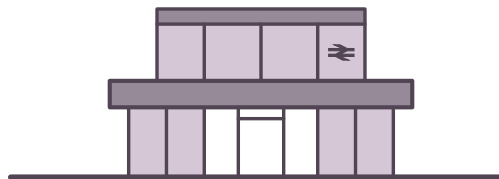
Pre-Grouping Era

These are the earliest stations, from 1830s to 1922. A good example is Wellingborough Station



Big Four Era

Between 1923 and 1947 the railways were principally ran by four companies, following the *Railways Act 1921*



Nationalisation - British Rail

Nationalisation took place in 1948, with an international modern style used widely



Privatisation

In 1997 the railway was privatised, with train operating companies operating the majority of stations

Understanding the Network Rail Estate

2.2 Architectural and Historic Significance



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Railway buildings contain evidence relating to the progress during the most significant period of industrial change in the world, prior to that experienced over the second half of the 20th century. As pioneers, the UK railways should be viewed in a world context when evaluating their cultural and historic significance.

All styles of architecture are represented in the Network Rail estate; from Cottage Orné to Brutalist and from Tudor to Art Deco. As well as the more well-known railway company engineers and builders such as Isambard Kingdom Brunel, Robert Stephenson and William Cubitt, many respected architects were employed to undertake extensive building works. These include Sir Matthew Digby Wyatt at Paddington, John Dobson at Newcastle, David Mocatta at Brighton, Francis Thompson at Cambridge and Chester, William Tite at Carlisle and Perth.

Buildings connected to the railways have generally not only survived major social and industrial changes, but are still functioning in the role for which they were designed — which is the case with very few other industrial buildings of a similar age. No other institution has as many structures and buildings so widely scattered across the UK.

The local station is generally easily identifiable whether it be for its position in town, or its architectural style or inherent details. These might include fences, ironwork, valances or components including platforms, footbridges, canopies, ticket halls, lamp-posts and signals. In some instances, the overall disposition of the buildings gives the impression of a small village with the station at its heart. In some towns and cities, the number of railway buildings in one location is so great the station name has become synonymous with the urban district: Victoria station in London comes to mind in this respect.

Stations are not only an entry point to the train services provided by the Train Operating Companies — they also serve as a gateway and can be the first and last impression of a place for visitors arriving by train. Most people are aware of the stations that serve them near their workplace or residence and generally want to see their station carefully looked after as an important asset for the community.



Image 2.3
Cottage Orné style at Ridgmont
station in Bedfordshire

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2.2 Architectural and Historic Significance



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To meet the demanding technical requirements of railway operation, and the ambitions of its promoters, engineers designed thousands of structures, advancing existing technologies and materials and inventing new types. It is a testament to the skill of the Stephensons, Brunel, Joseph Locke and many others that these are still operational today, and Network Rail is the owner of some of the most famous and historically important engineering structures in the world. To begin with these engineers adapted designs developed for canals and turnpike roads to create bridges, viaducts and tunnels, but often built on a hitherto unprecedented scale. George Stephenson's Sankey Viaduct (1830, Grade I) is the world's first and has recently had OLE installed. Of the many that followed, perhaps Ribbleshead on the Settle & Carlisle is the most celebrated. Many are listed. Early tunnels, too, were heroic civil engineering undertakings, such as Brunel's Box Tunnel and Robert Stephenson's Kilsby. Often they have highly architectural portals in a range of styles.

Most early railway bridges were masonry – brick or stone – and this continued to be the norm for thousands of minor structures, often beautifully built despite their humble status. Iron, and later steel were adopted for more challenging circumstances.

Iron and Steel do not survive as well as masonry structures because they are prone to corrosion and stress, but they include amongst their number pioneering and exceptionally important examples of Victorian engineering, and national icons:



Stephenson's High Level Bridge between Newcastle and Gateshead and the Conway tubular bridge, Brunel's hybrid Royal Albert Bridge, Saltash, and the Forth Railway Bridge, the first large scale structural use of steel, and now a World Heritage Site.

Image 2.4

Barmouth viaduct, grade II* listed



Refer to Case Study 3:
High Level Bridge

2.3.1 Designations Databases

Network Rail's database of its listed buildings, structures, scheduled monuments and conservation areas sits within the GeoRINM geospatial records. This database is updated regularly by Network Rail's Land Information team and is the single source of reference.

However, it should be noted that new listings are continuously being made or upgraded, new scheduled monuments are being added every year, and conservation areas are often extended and new ones are created. Therefore, the database might become regularly out of date.

Advice should always be sought from the Network Rail Route Town Planning Manager in respect of the planning status of any site where works are proposed.

2.3.2 Managed Stations

Whilst Network Rail is the owner of all railway infrastructure in England, Scotland and Wales, the majority of the 2500+ stations are managed and operated by the Train Operating Companies.

However, a small number of stations (usually the busiest) are managed and operated by Network Rail. Of these, sixteen are listed, or part listed and are of significant historic and architectural interest. Some historic information might be available to assist those managing and developing works proposals or advising third parties about the historic importance of these buildings.



Image 2.5
Edinburgh Waverley station, a Network Rail managed station. Category A listed.

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2.4 Upgrading the Historic Estate



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2.4.1 Listing — managing change, not preventing it

Listing does not mean that a building or structure should become a museum piece: its purpose is to manage change in order to protect what is significant about the place — not prevent it from being used. It is therefore generally understood by those involved in building conservation that buildings and structures on the operational network should adapt in order to thrive. Imaginative well-designed alterations and new interventions that respect the character of the listed structure are encouraged.

2.4.2 Underlying approach to changes and modernisation

It is inevitable that the continual upgrading of train services and technology might have an impact on listed structures, whether they be track realignments requiring a cut-back of canopies or the installation of overhead electrification on viaducts, through tunnels or under bridges.

These challenges should be faced realistically. Where change is necessary, care should be taken to retain those characteristics that make the building notable or memorable (its 'significance').

What should be avoided are short-term solutions and cosmetic changes likely to cause long-term damage such as signage and servicing installations. Interventions should be carried out with statutory consent, be well designed, reversible and not in any way detrimental to the building's long-term future. CCTV installations are a prime example where real physical damage can be caused to the fabric of a building as well as producing a visual eyesore, whenever crude support brackets, a range of dissimilar fixings and poorly thought-out cable routes are introduced without consideration or strategic thought. Section 5.5 covers the containment of services in more detail.

So long as high-quality heritage and design advice is received at the beginning of each project, then unexpected costs can be minimised and the risk of lost time on controversial consultations with local planning authorities or statutory national heritage bodies can be spared.

The Railway Heritage Trust (RHT) is an independent body whose purpose is to provide grants and advice for preservation and restoration of operational railway heritage that is not feasible to fund by other means or require change of use. (Refer to Appendix C)



Image 2.6

Chorley flying arches, Grade II listed being rebuilt in higher position to allow OHLE installation.

3

Heritage
Planning and the Legal Context



Image 3.1
Glasgow Central station,
Category A listed

Planning and the Legal Context



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The planning legislation related to historic infrastructure is complex and sometimes open to a degree of subjectivity.

This guidance explains the national laws and related processes that apply to the buildings and other assets in Network Rail's ownership and advises on the most appropriate way to make planning and listed building consent applications and consult with the necessary authorities and stakeholders.

The railway companies have inherited a legacy of special provisions and exemptions from the laws applicable to other property or land owners and these are explained as well as the responsibilities and penalties that apply to the individual companies.



Image 3.2
Stamford railway station, 1848,
Grade II* listed

Planning and the Legal Context

3.1 Ownership of the Buildings

3.1.1 Ownership

Network Rail is freehold owner of all buildings and structures in its estate. Other than the 'non-franchised' stations (that are directly managed by Network Rail) most of the other buildings are tenanted by Train Operating Companies (TOCs) and Freight Operating Companies (FOCs) and managed by them on a daily basis. The Arch Company purchased Network Rail's former commercial property estate in 2019 and own a portfolio of approximately 5,200 railway arches, business estates, former station buildings and other properties.

3.1.2 Repair and maintenance

The relationship between Network Rail, its leaseholders and tenants is based upon a contract where Network Rail is responsible for the overall condition and long-term repair and renewals of the structures while the tenant is responsible for daily maintenance and upkeep of the premises they occupy. Some premises have further sub-tenancies of the lease where, for example, a retail or catering use has been introduced or where non-rail tenants are in occupancy.

3.1.3 Landlord's Consent

Generally, the tenant is free to decorate and possibly modify the premises to suit commercial need — in all cases having first obtained formal advice and approval from the landlord (Landlord's Consent). The most successful developments are those where the needs of all parties are satisfied and where the brief is developed and agreed through direct and open consultation.

3.1.4 Planning consents

Where works are contemplated to any listed building or structure or building in a conservation area, there should first (no later than GRIP 2) be consultation with the appropriate Network Rail Buildings Route Asset Manager, Town Planning manager and the Principal Architect's team.

The Route Town Planner should consult the Conservation Officer at the local planning authority to establish whether any application should be made and the extent of the work to be included.

Please note that consultation with Network Rail's Town Planning and Principal Architect's Team does not remove the duty to obtain, where required, formal 'Closure' or 'Change' in respect of the Railways Act 1993, Landlord's Approval for the works or any other legal requirements.

Reference should also be made to asset information files, Health & Safety files and the Risk Register before undertaking design or construction in respect of all railway buildings.

In respect of works which are deemed to require Planning Permission and/or Listed Building Consent, it is the responsibility of the proposer to obtain the consents, taking advice from the Town Planning team. Section 3.2 provides details of the necessary steps and requirements, which can be extensive. Contractors' scope should include sufficient resources to prepare required drawings, visualisations and reports.



Refer to Case Study 1:
Great Western Main Line Electrification

3.2.1 Seek advice

Confirmation should be sought from the Network Rail Route Town Planning Manager as to whether proposed works of repair, renovation, extension or demolition require planning permission from the local planning authority, or whether they fall under Permitted Development.

3.2.2 Permitted Development

Many works on railway premises are permitted development. This is covered under:

- Part 8 (Class A) of Schedule 2 of the Town and Country Planning (General Permitted Development) (England) Order 2015
- Historic Environment (Wales) Act 2016
- The Town and Country Planning (General Permitted Development) (Scotland) Order 1992, Part 13 (Class 34)

These include most changes of use provided they serve the travelling public. However, works where the design or appearance of a station could be said to be materially altered are specifically excluded from these permitted development rights.

Works might also be permitted development under:

- Part 18 (Class A) of Schedule 2 of the 2015 Order in England
- Historic Environment (Wales) Act 2016
- Part 11 (Class 29) of the Scottish 1992 Order.

There are restrictions on what is covered and in all cases the works should have originally have been authorised under an Act of Parliament.

Ultimately it is the local authority that should decide whether works are permitted development.

This process is generally simpler than seeking full planning permission but can still require the submission of full planning drawings and supporting information, depending on the nature of the proposal.

Note that Permitted Development does not override Listed Building legislation, or the need for Listed Building Consent.

If none of the above apply, then a full planning permission should be obtained.



Image 3.3
Newcastle Central station,
1850, Grade I listed

3.2.3 Listed buildings

Different rules apply where buildings and structures are either listed as buildings of special architectural or historic interest, or located within designated conservation areas, by virtue of:

- Section 7 of the Planning (Listed Buildings and Conservation Areas) Act 1990
- Section 7 of the Planning (Listed Buildings and Conservation Areas) Act 1997 (Scotland)

Any works of demolition, alteration, extension involving a listed station or railway structure that would be likely to affect its special character, should be the subject of an application for Listed Building Consent.

Such works would include practically anything of a physical nature — including repainting, the addition of fittings such as CCTV and OLE and the installation of cabling — be they external or internal works.

It might also extend to works in a building attached to a listed building, or located within the curtilage. This is determined by the local planning authority and not the applicant.

It is a criminal offence to 'demolish, alter or extend a listed building, or affect any fixtures or fittings therein, in any way which affects its character, without first obtaining Listed Building Consent.' The penalties for doing this can be heavy — a fine and / or imprisonment.

3.2.4 Scheduled monuments

In the case of scheduled monuments, scheduled monument consent is required for all works, however, minor, including repairs.

Consent is obtained from the Department of Digital, Culture, Media & Sport, Cadw or Historic Environment Scotland, according to location. As with listed buildings, it is a criminal offence to carry out works to a scheduled monument, and stiff penalties can be applied.

It should be noted that the control of works to a scheduled monument by the above bodies is demanding. As a general principle, only works that are demonstrated to be the minimum necessary to protect the monument are likely to be granted consent.

3.2.5 Conservation areas

The demolition of any building within a Conservation Area should require planning approval from the Local Planning Authority. Where planning permission is required, the impact of proposed external alterations (not internal) to an unlisted building on the character and appearance of the conservation area are a material consideration in determining the application. Any proposed redevelopment or new building should preserve or enhance the character or appearance of a conservation area.

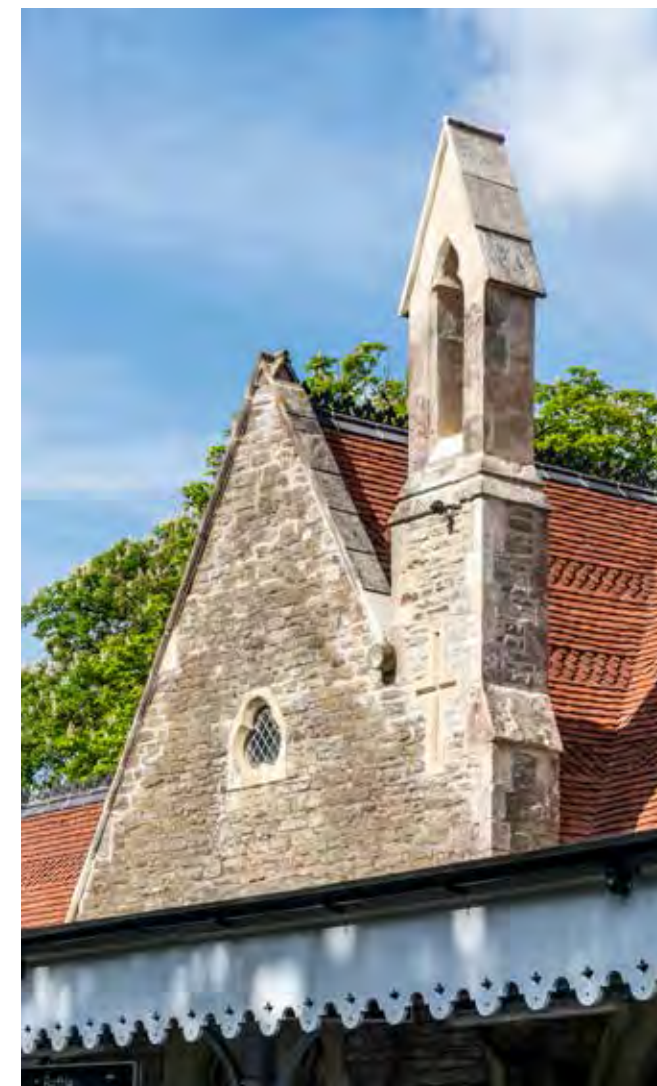


Image 3.4
Battle station, 1852,
Grade II listed



3.2.6 Advertising and signage

Functional advertisements and signs which are displayed on stations wholly for the purposes of announcement or direction in relation to the operation of the railway undertaking, are granted deemed consent under:

- Class I of Schedule 3 of the Town and Country Planning (Control of Advertisements, England) Regulations 2007
- Town and Country Regulation 1992 in Wales (amended 2017)
- Class 1 of Schedule 4 in the Scotland Town and Country Planning (Control of Advertisements) Regulations 1984 (as amended)

Commercial advertisements are also permitted within stations where they are not readily visible from the outside, and this is sometimes extended to station forecourts.

However, **these deemed consents do not override the requirement to obtain Listed Building Consent** if the station is listed.

Further guidance in the context of listed buildings and

conservation areas in England and Wales respectively is given in:

- PPG19 — Outdoor Advertisements and Signs guidance
- Technical Advice Note 7 Outdoor Advertisement Control

3.2.7 Statutory undertaker

When Railtrack plc took over the management of the railway infrastructure, British Rail's status as a Statutory Undertaker was conferred on Railtrack plc and the Train Operating Companies. This status has, in turn, been conferred on Network Rail as Railtrack's successor.

The General Development Order (GDO) in England and Wales and the General Permitted Development Order (GPDO) in Scotland exempts the statutory undertaker from the duty to comply with the process of obtaining approvals under the Building Regulations or Building Acts within operational premises in England and Wales.

However, Network Rail's policy is to comply with these regulations, providing they do not contradict any operational constraints. In Scotland, the requirement to obtain a Building Warrant for any alteration or addition to a station building still applies.

3.2.8 Accessibility

The Equalities Act 2010 requires service providers such as Network Rail and Train Operating Companies to make reasonable adjustments for disabled people in the way they deliver their services.

This does not mean, however, that the Equality Act overrides other legislation such as listed building or planning legislation, and the duty to obtain appropriate approvals still applies in the case of changes made to improve access. An understanding of heritage significance and dialogue with the local planning authority should be required to make reasonable physical adjustments in ways which should also satisfy the requirements of listed building consent and other planning approvals. Historic England and others provide guidance on this (see Appendix A)

Planning and the Legal Context

3.3 Listing

The purpose of listing is to conserve the special historic or architectural interest of a building or structure, known as its 'significance'. Crucially, this does not mean that changes can never be made. It is accepted by local planning authorities and the Statutory National Heritage Bodies that change is inevitable for listed buildings. Listing is about managing that change to balance significance and functional needs.

3.3.1 Reasons for listing

The Secretary of State for Digital Culture, Media & Sport, the Welsh Ministers and Historic Environment Scotland are required under:

- Planning Act 1990 (England)
- The Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997
- The Historic Environment (Wales) Act 2016

to compile lists of buildings of special architectural or historic interest, for the guidance of local planning authorities in the exercise of their own planning function.

The overarching reasons for designation are:

Architectural Interest: the lists are meant to include all buildings which are of importance to the nation for the interest of their architectural design, decoration and craftsmanship.

Important Examples of particular building types and techniques (e.g. buildings displaying technological innovation or virtuosity) and significant plan forms;

Historic Interest: this includes buildings illustrating important aspects of the nation's history;

Historical Association with nationally important people or events;

Group Value, especially where buildings form part of an important or architectural or historic unity or a fine example of planning (e.g. squares, terraces or model villages).

A building might qualify for listing under more than one of the above criteria.

The reasons for inclusion in the statutory list are set out in the Planning (Listed Buildings and Conservation Areas) Act 1990 and further expanded in a series of helpful advice notes published by:

- DDCMS (Principles of selection for listed buildings)
- Historic England (Listing Selection Guide Infrastructure: Transport)
- Cadw (Technical Advice Note 24: The Historic Environment)
- Historic Environment Scotland (Designation Policy and Selection Guidance 2019)



Image 3.5
Conwy railway bridge,
1848 Grade I listed

Planning and the Legal Context

3.3 Listing



3.3.2 Listing grades

Listed buildings are classified in England (Historic England) and Wales (Cadw) by grade to show their relative importance:

- Grade I — Buildings of exceptional interest.
- Grade II* — These are particularly important buildings of more than special interest.
- Grade II — Buildings of special interest which warrant every effort being made to preserve them.

A similar principle of subdivision into three categories exists in Scotland (Historic Environment Scotland), with Categories A, B and C.

The vast majority of listed buildings are designated at the lowest level. For example, in England less than 10% are at the higher levels of II* and I.

Image 3.6
Wakefield Kirkgate station,
1854, Grade II Listed

3.3.3 New listings

The lists are not definitive and buildings are newly listed every year. Anyone can make an application to have a building assessed for listing, at any time in the planning and development process

In Wales, there is a system of Interim Protection for assets that are under consultation for possible listing. This status means the building is treated as listed.

In England and Wales, local planning authorities can serve a Building Preservation Notice to prevent demolition whilst listing is being assessed, though this power is seldom exercised.

3.3.4 How to find out if a building is listed

All new or amended designations are provided to the Network Rail Routes by the designating authorities and are subsequently incorporated into Network Rail's GeoRINM database.

Historic England and the other statutory heritage bodies manage online registers, which can be searched by map, address, name, and which are revised as new and amended entries are added.

Note that some of the mapping data is erroneous and the local planning authority should be consulted if there is any doubt about whether a structure is listed or not.

3.3.5 Extent of listing

Once included, a building is listed in its entirety. Whatever the grade or category, the listing includes the interior as well as the main structure, all features on the interior and exterior of the building, including late additions to an old building including modern replacement doors and windows, for example, even if not specifically described. The protection is not restricted to the main street level building or external envelope.

In some cases, alterations already made to the original building might be of interest and their retention might be considered as desirable.

The function of most list descriptions in England and Wales is simply to identify the building. They do not describe the extent of listing or significance and if a feature is not mentioned this does not mean that it is not listed.




3.3.6 Enhanced list entries

There are exceptions: in England since 2013, list descriptions can explain what is significant and whether anything is excluded from listed building control. An application can be made to Historic England to revise the list entry in this way. There is a modest fee but there can be considerable benefits: the new list entry for Sheffield Midland station excludes a number of platforms and structures that were previously considered part of the listed building.

3.3.7 Curtilage and Setting

The concept of curtilage extends listed building consent to ancillary structures within the historic curtilage of listed buildings.

The setting of a listed building is a material consideration in planning and listed building consent applications. For example, the local planning authority might take into consideration the impact of a proposed kiosk or other structure on the setting of a listed station building.

-  **Listing entry no.1 — Grade II listed**
Station, including platforms, footbridge / subway, canopies and anything attached to them, but not track or track bed
-  **Curtilage to listing entry no.1**
Former goods office by entrance
-  **Listing entry no.2 — Grade II* listed**
Former goods shed

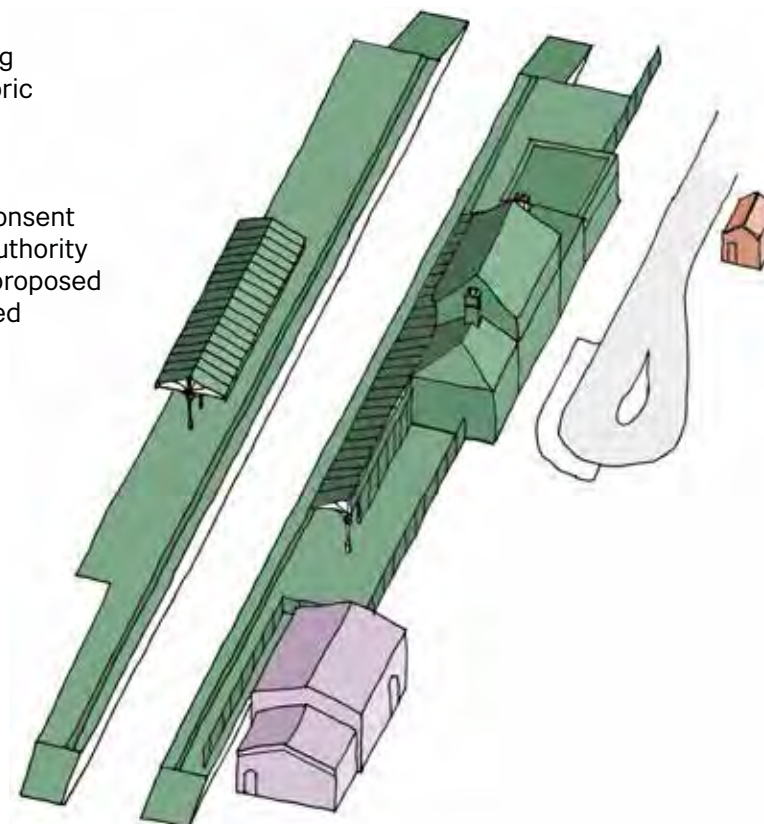


Image 3.7
Example of listed
elements to a station

Planning and the Legal Context



3.4 Conservation Areas


A Conservation Area typically covers whole neighbourhoods, even if the buildings are not listed. Designation of a conservation area gives the area a broader protection than the listing of individual buildings. The purpose of the designation is to conserve the character and appearance of historic areas. Conservation Area Consents are no longer required, but the conservation area is a major consideration for relevant planning applications.

Local planning authorities are required to review existing Conservation Areas and designate new Conservation Areas. The local Planning Authority is then required to make proposals for the preservation and enhancement of the designated area.

In England and Scotland there is no national list of conservation areas: these are held locally on local authority planning websites. In Wales a map of conservation areas can be accessed through the Welsh government website.

Many conservation areas have appraisals that are intended to describe the special character and appearance.

-  Prior approval application for the demolition, reconstruction or alteration of a building or structure where its design or external appearance should be materially affected.
NOTE: does not apply to internal changes
-  Prior approval application for demolition, reconstruction or alteration of a wall over 1m high facing a public highway or footpath

NOTE: local planning authorities can refuse prior approval applications on the grounds of siting or impact on the amenity of the neighbourhood. In doing so, planning authorities might consider the impact of the proposals on the character and appearance of a conservation area to be a material consideration.
-  Permitted development for the erection, demolition or alteration of buildings and structures on the station that do not affect its external appearance

NOTE: this is indicative only. The application of permitted development rights to individual stations is a matter of fact and degree: always consult the relevant NR Town Planning team for advice on what works require what kinds of permission before undertaking the works

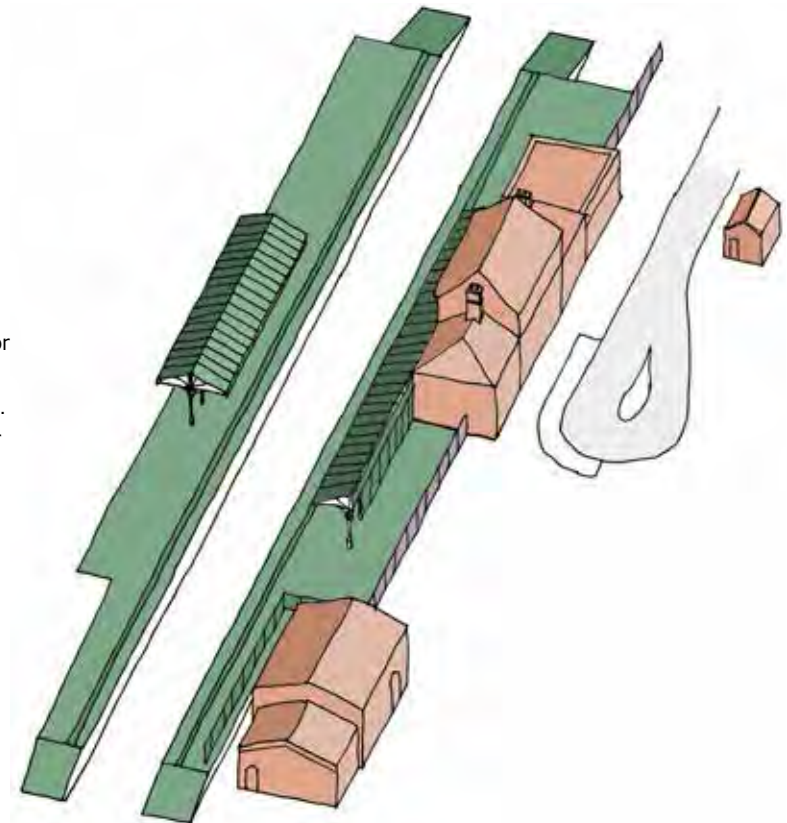


Image 3.8
Planning approvals in a Conservation Area

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3.5 Tree Preservation Orders



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3.5.1 Tree Preservation Orders Network Rail exemption

Care should be taken where trees are near a building, or within the site or adjacent to it. Many trees are protected by Tree Preservation Orders (TPOs) and the Local Planning Authority maintains a record of their locations. Although Network Rail is exempt from complying with TPOs on its own land, this privilege should only be applied to locations that are safety critical to the operation of the railways. In such situations, Network Rail's powers to ignore TPOs extend also to trees in third party ownership. It should be noted however that there is always an obligation to protect certain species of nesting birds and bats.

3.5.2 When to contact the Local Planning Authority

Where works are to be carried out and any part of a tree could be affected — including roots — the status of the tree should be checked with the Local Planning Authority and the recommended protection put in place.

Consent is required before calling in a registered tree surgeon to remove branches or trim any tree having a Tree Preservation Order. Agreed interventions should be done without damaging the existing or future growth.

Within conservation areas, local authorities should be consulted before felling a tree over a certain size, in order to decide whether to place it under a TPO.

When trees are not protected by TPOs then adequate protection should still be considered.

It should also be noted that there are important differences between the English, Welsh and Scottish regimes. The Route Town Planning Team can advise in all cases.

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3.6 Archaeology



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3.6.1 Archaeology of the railways

Railways as we recognise them today first appeared in the UK in the first quarter of the 19th century and remains of early infrastructure might remain below what is visible today. Buildings used for the manufacture of early railway locomotives, carriages and rolling stock still exist on land adjoining railway stations, such as those of Robert Stephenson & Co in Newcastle upon Tyne. More recent items of infrastructure might also be built over long-demolished warehouses and industrial areas that grew up around stations that were later demolished to allow for expansion. Remains can be found in the most unexpected places, even above ground.

3.6.2 Impact of railways on archaeology

The civil engineering of railways can involve the removal of much archaeological evidence. Indeed, the construction of the railways has brought about many archaeological discoveries — from the 1840s up to Crossrail today. Nevertheless, works on the railway might still have an impact on buried archaeology.

Information about the potential for this should be obtained from the local planning authority's Historic Environment Record (HER), National Heritage Bodies and often from local museums.

3.6.3 Human remains

Sites might also include places of burial and cemeteries. The finding of human remains should, in the first instance, be reported immediately to the local police authority.

3.6.4 Archaeological requirements for major works

When major works are contemplated, it is vital to establish the potential archaeological interest of a site. While not always of national significance even the smallest of items, such as segments of early rail equipment might be of interest to a local museum or educational establishment.

For this reason, local planning authorities and archaeological services are likely to require an initial Desk Based Assessment prepared by an appropriately qualified archaeologist. Depending on the results of this, further assessment, investigation and mitigation measures might be required, as agreed in a so-called Written Scheme of Investigation (WSI).

3.6.5 Recording, removal, storage

The WSI might require that, having carefully recorded their location and taken photographs of the items in situ, they should, subject to approval, be carefully removed and safely stored until their disposal has been agreed.

The Railway Heritage Designation Advisory Board of the Board of Trustees of the Science Museum has statutory powers of designation for artefacts and should be contacted.

If it is necessary to move artefacts, all fragile items should be fully supported and carried in safe packaging and be carefully stored until a decision is given on any further relocation.

3.6.6 Treasure trove

The Treasure Act 1996 is a UK Act of Parliament, defining which objects are classified as treasure, and legally obliging finders of objects which constitute treasure (as defined in the Act) to report their find to their local coroner within 14 days.

Items of value might be declared as Treasure Trove and are to be reported, as the law requires. The local museum might be able to provide advice. For further guidance and a list of local archaeological agencies, reference should be made in England to National Planning Policy Framework; in Wales to Planning Policy and technical guides; in Scotland to the Historic Environment Policy Statement and technical guides.



The Heritage at Risk register brings together details of Grade I and II* listed buildings and scheduled ancient monuments known to Historic England as being 'at risk' through neglect and decay, or vulnerable to becoming so. In Wales, the quinquennial condition survey of listed buildings gives data relating to all listed buildings, irrespective of grade. The quinquennial condition survey of all listed buildings confirms that their condition is monitored regardless of their heritage grading.

The criteria for being 'at risk' are based on assessment of condition and, where applicable, occupancy:

Very Bad means a building where there has been structural failure or clear signs of structural instability; or loss of significant areas of the roof covering, leading to major deterioration of the interior; or a major fire or disaster affecting most of the building

Poor structure with deteriorating masonry and / or leaking roof and / or defective rainwater goods, usually accompanied by rot within and general deterioration of most elements of the building fabric, including external joinery, or where there has been a fire or other disaster that has affected part of the building.

Fair means a building which is structurally sound, but requiring minor repair or showing signs of a lack of general maintenance.

Good means structurally sound, weather-tight and with no significant repairs needed.

Occupancy is noted (to the best information) as vacant, part-occupied, occupied, or (exceptionally) unknown.

The priority for dealing with an 'at risk' building considers not only the 'static' attributes of condition and occupancy but also the 'dynamic' rate of deterioration. A building in fair condition whose roof is beginning to fail and is deteriorating rapidly thus merits a greater priority for action than one whose roof fell many years before and is subject to slow erosion of its masonry.

Priority is graded thus:

- A. Immediate risk of further rapid deterioration or loss of fabric; no solution agreed.
- B. Immediate risk of further rapid deterioration or loss of fabric; solution agreed but not yet implemented.
- C. Slow decay; no solution agreed.
- D. Slow decay; solution agreed but not yet implemented.
- E. Under repair or in fair to good repair, but no user identified or under threat of vacancy with no obvious new user (applicable only to buildings capable of beneficial use; often specialised buildings which have become functionally redundant).
- F. Repair scheme in progress for identified use; functionally redundant buildings with new use agreed but not yet implemented.

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3.7 Buildings at Risk



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A similar register of listed Buildings at Risk in Scotland is maintained by Historic Environment Scotland. The register is a working tool, helping to define the scale of the problem and to prioritise action by everyone who can play a part in securing the future of outstanding and irreplaceable parts of our built heritage.

Should you be notified that a building in your care has been added to the 'at risk' register then Network Rail Route Town Planning Managers are to be informed so that a plan of action can be agreed and implemented.



Image 3.9
Battersea Park station

Planning and the Legal Context

3.8 Urgent Works



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Section 54 of the Planning (Listed Buildings and Conservation Areas) Act 1990 enables a Local Authority (or Historic England in London) to carry out urgent works for the preservation of listed buildings in their area after giving notice to the owner.

In Scotland, the corresponding details are to be found in Section 49 of the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997.

The scope of urgent works notices extends to any neglected building provided that any urgent works do not unreasonably interfere with residential use.

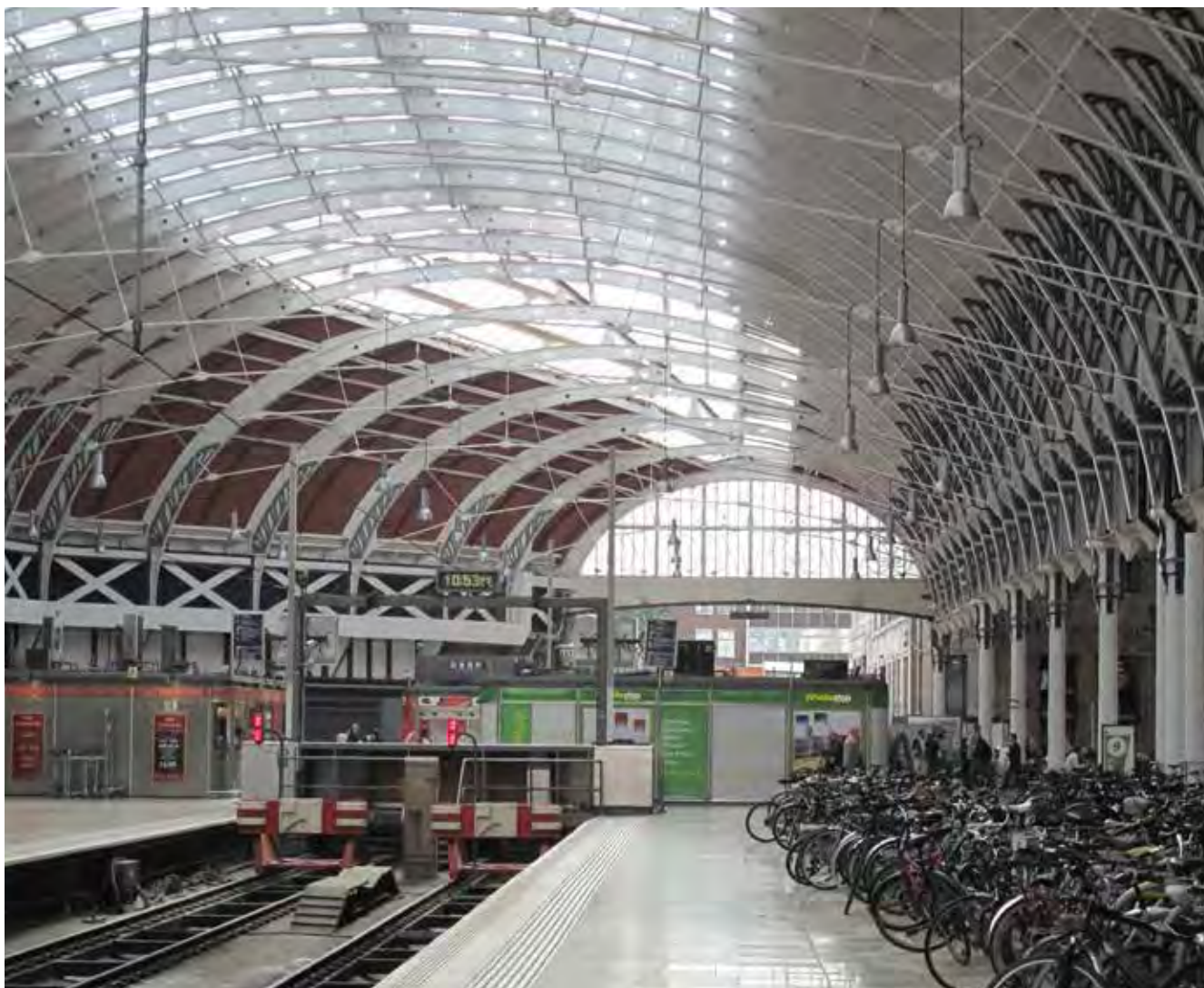
These powers can be used only in respect of an unoccupied building, or the unused part of a partly occupied building.

The legislation enables the Secretary of State / Scottish Ministers / Welsh Ministers to direct that the powers should apply to an unlisted building in a conservation area if it appears that its preservation is important for maintaining the character or appearance of that area.

Local Authorities (or Historic England in London) might recover from owners the cost of urgent works carried out under these provisions, subject to an owner's right to make representation to the Secretary of State / Scottish Ministers / Welsh Ministers.

Image 3.10

Paddington station span four was issued with an enforcement notice, it is now restored and removed from the 'At Risk Register'. Paddington station is Grade I listed.



3.9.1 Repair Notices

If a local planning authority (or Historic England in London) considers that a listed building is not being properly looked after, it might, under Section 48 of the Planning (Listed Building and Conservation Areas) Act 1990, serve a repair notice on the owner.

In Scotland, the corresponding information is given in Section 43 of the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997. This notice should specify the works which the authority reasonably considers necessary for the proper preservation of the building and should explain the relevant provisions of the legislation. These powers are not confined to urgent works or to unoccupied buildings.

In Wales, local planning authorities also have the power to issue a Repairs Notice. It should specify the works that the local planning authority considers necessary for the proper preservation of the building and should explain to the owner how this part of the legislation works. A Repairs Notice might be issued for any listed building where the local planning authority considers that there has been a protracted failure by an owner to keep the building in reasonable repair and so places the building at risk. The Welsh Ministers have the same powers, but these are only be used in exceptional circumstances.

3.9.2 Enforcement

Where it appears to a local planning authority that works have been or are being carried out to a listed building that do not have Listed Building Consent or that are failing to comply with a condition attached to a Listed Building Consent, they might issue an Enforcement Notice that sets down a time period within which precisely specified works should be completed. If, however, the works specified in the Notice have not been completed within the set period, the local planning authority might elect to carry out the works and recover the reasonable expenses incurred in doing so.

In Wales provision exists for temporary stop notices, enabling local planning authorities to put an immediate halt to unauthorised works.



Image 3.11
Gates in Llandudno station

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3.10 Railway-specific Legislation



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Although this guidance refers to heritage issues, it should be noted that other Acts, provisions, and regulatory control cover works to buildings in Network Rail ownership. Safety provisions governing works and operating provisions are controlled by The Office of Rail and Road (ORR). Whilst it might be necessary to secure Listed Building Consent (or Planning in Conservation Area) when undertaking works, when applicable, it is also mandatory that formal consent for the works is obtained from the Rail Regulator should they be classified as 'Closure' within the provisions of the Railways Act 1993, or regarded as 'Change' under contractual Station or Depot Access Conditions. Removal or alteration of railway facilities without approval might lead to a requirement to reinstate and a substantial fine.

The railway is the only industry that has specific legislation protecting its heritage. The Railway Heritage Act 1996 enables historically significant artefacts and records that are operational within today's railway industry to be 'designated' – protected and saved for the nation so that future generations are able to understand the history of the railway in Britain. The Railway Heritage Designation Advisory Board (RHDAB) is the body that decides which artefacts and records are historically significant enough to be designated. For all proposals to dispose of such designated artefacts and records, it is necessary to contact the Board to obtain its advice and approval to do so. If the Board approves, it should also agree where the artefacts should go.

Image 3.12
Settle station, Grade II listed



Heritage
Project Planning and Management





Image 4.1
Coventry station,
Grade II listed

Project Planning and Management

4.1 Responsibilities and Penalties



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Before starting a programme of design, construction or maintenance, it should be the responsibility of all those initiating such works to confirm they are familiar with current legislation and guidance and that Network Rail policies are being followed. It is also their duty to inform others who might be involved in the project of all matters relevant to their work. It is their responsibility to assess the level of consultation required from Network Rail or the degree of assistance needed from experts or consultant. For this purpose, a checklist to assist projects through the requirements at each GRIP stage is provided in Appendix B.

Finally, it should be their duty to confirm consents from the local planning authority are properly in place before starting the works to avoid the possibility of facing criminal prosecution for making alterations to a listed building without consent.

For this reason, too, works should be carried out in exact accordance with the submitted drawings.

Currently the penalty on conviction in a Magistrate's Court in England and Wales or Sheriff Court in Scotland is a fine of up to £20,000 and / or six months imprisonment. For conviction in a Crown Court the fine is unlimited and a prison sentence of up to two years might be imposed in addition to the fine. A conviction can result in adverse publicity for the individual, Network Rail, the Train Operating Company and any tenant involved. It is worth noting that criminal offences cannot be covered by professional indemnity (PI) insurance.

Penalties apply from failure to obtain and comply with listed building consent, and in relation to scheduled monument consent. More information in these penalties can be found online.



Refer to:
Project Manager's Heritage Checklist



Image 4.2
Footbridge at Worksop railway
station, 1849, Grade II listed



4.2.1 Understanding the special requirements and timescales of listed building consent

Projects making changes to listed buildings should fully understand the requirements and the necessary skills and timescales for achieving this. The diagram and project management checklist in Appendix B summarises these for each GRIP stage and should be employed on all projects.

The critical issue is to provide enough detail of the existing site conditions and the proposal at the outset. It is quite common for an insufficient level of detail to be provided and the application registration process to be held up pending the submission of the missing detail. The level of supporting information and design detail required for listed building consent is much greater than that needed for the equivalent GRIP stage.

In particular, there is no such thing as outline listed building consent: permission is only granted for detailed proposals (RIBA stage 3 equivalent or more) and projects should build precisely what they have consent for. Amendments should require further negotiation and possibly consent; to proceed without these leaves Network Rail and contractors exposed to possible fines or imprisonments for making alterations to listed buildings without the necessary consent

4.2.2 Programme

Sufficient time should be allowed in the programme for developing appropriate designs and consulting the local planning authority prior to submitting necessary approvals and consents. Projects and routes should not underestimate how much time is required to get to the point that they can start on site:

- Many months of pre-application preparation and discussion are likely to be required
- The application process itself is a minimum of 8–12 weeks
- Should more detail be required or any aspect of the application be regarded as contentious this period could be extended
- Even when consent has been given, there are often conditions which should be discharged before any work can begin
- See the GRIP diagram in Appendix B

4.2.3 Contractor scope and specification

If works are contracted, the contracting team should include the necessary resources, including an accredited conservation architect for preparation of method statements and planning drawings. Further details are in the programme management checklist. Failure to specify these is frequently the cause of programme delay.

One key aspect of making a listed building consent application is the duty of the applicant to demonstrate that the appointed designers are conservation specialists.

4.2.4 Consulting Town Planning Team on requirements

No later than GRIP 2, the Network Rail Town Planning Team should be consulted about the possible consents that might be required and how these should be negotiated.

Once it is established that a listed building consent application is required, there are key issues which should be addressed by applicants in respect of the level of design detail required to support an application and the way these are presented. The listed building consent procedures are different and separate to the planning permission processes and it should be established which type of application applies to a job: in some cases, both might be necessary. All approaches to local planning authorities and all applications should be made by the Town Planning Team.

4.2.5 Understanding the significance of the listed building

Before a single option selection is made, the project should understand the extent of designation and significance of the structures. It cannot rely on the list entry alone, which might be erroneous and, in most cases, does no more than identify the building. The success of the application should depend on demonstrating an understanding that the impact does not adversely affect the significance of the building or structure.

Where there is doubt about which parts of the building can be altered and for larger, more complex, more highly graded buildings, it is likely that a 'Statement of Significance' might be required. This should be agreed with the conservation officer (and national heritage body) before options selection starts.

The Statement should be proportionate to the significance of the site and the scale of the project. It is highly desirable to appoint a specialist conservation advisor or conservation architect to prepare this. The statement should serve as an invaluable aid in objectively assessing any impact of future projects. Whilst the required research and assessment might appear to be onerous, it is likely to repay the time spent by de-risking and assisting the application's smooth progress through the planning procedures.



Image 4.3
Llanfairpwll station
footbridge refurbishment.



4.2.6 Options selection and initial pre-application engagement

Heritage risks should be properly considered, weighted and recorded in the single option selection process, so that GRIP 4 can proceed in confidence. Prior to this, it is therefore recommended to undertake a pre-application discussion with the local planning authority (and national heritage body) at GRIP3 to agree the Statement of Significance and test their response to options.

If intrusive surveys are required, this may be the subject of consultation with the concerned local planning authority and may require a listed building consent application: consult the Town Planning Team for advice.

Image 4.4
Manchester Victoria station
Entrance canopy

4.2.7 Making an application

Listed building applications require a set of documents and accompanying drawings explaining and justifying the proposals against planning policy and legislation. Pre-application discussions should clarify precise requirements for the documents, because these should vary from case to case. For example, they might require detailed visualisations.

The drawings should show detail, more than required for planning applications. These are equivalent to full construction drawings.



Refer to Case Study 1:
Great Western Main Line Electrification

4.2.8 Supporting heritage report and other documents

The proposals should be justified by an accompanying heritage report, building on the earlier Statement of Significance. This should be prepared by appropriately experienced and qualified consultants,:

- in England, Historic England has published an advice note on the form and content of this report, which is called a Statement of Heritage Significance
- in Wales, it is called a Heritage Impact Statement, and the contents and methodology are described in Cadw's Heritage Impact Assessment in Wales. This should include a formal statement on access in relation to works which affect access arrangements to or within any part of a listed building this is not used as a private dwelling
- HES' Environmental Impact Assessment Handbook has some guidance on Cultural Heritage Impact Assessment in Appendix 1.

This might be supplemented with engineering method statements to prove that the works proposed can be undertaken without risk to the historic fabric. Requirements also exist for Design and Access Statements to accompany planning applications in most cases.

4.2.9 Discharging conditions

It is normal for conditions to be attached to the consent, covering matters such as paint colours, material samples and archaeology. Some of these are called 'pre-commencement conditions' which means that the works to the building cannot be start on site until the condition or relevant part of it has been discharged.

The Town Planning Team should advise on how to discharge these, but they could require design resources and this should be allowed for in the GRIP 4-5 scope and programme, so that it does not hold up programme.



Image 4.5
Glasgow Central station
concourse, retail units

4.2.10 Keeping records

Complete copies of applications and consents are to be sent to Network Rail for inclusion in central records. These applications should require to be submitted and determined at the same time as the Outline / Planning Permission in Principle application.

4.2.11 Points to note

- If it is unclear to the applicant what the appropriate level of detail is required, it is advised that a pre-application consultation is held with the Conservation Officer (which might involve a fee).
 - Most application forms include a check list of material required to be submitted to form a valid application and these requirements should be satisfied technically. If this isn't done the application might not be officially registered.
 - For complex or contentious applications, it should be necessary as part of the pre-application and application submissions to provide a detail explanation of the options selection process in order to justify the preferred option. A number of projects have experienced delay or refusal because they could not provide a robust, evidence-based explanation of the optioneering process.
 - For large or complex projects, the scope of the works should be carefully defined to confirm that all design aspects of the proposal are incorporated into the application.
- Once it is established that a listed building consent application is required to be submitted, there are key issues which should be addressed by applicants in respect of the level of design detail required to support an application and the way these are presented. The listed building consent procedures are different and separate to the planning permission processes and it should be established which type of application applies to a job: in some cases, both should be necessary.
 - Often overlooked, but of concern, are those works within the setting of a listed building but not necessarily impacting on it physically. The sometimes-subjective nature of the assessment of the visual impact can result in a prolonged debate. Justification and analysis of the proposals should be undertaken at the correct time.
 - The level of detail required to support an application and the complexity of the impacts on existing buildings might, for some projects, require a Conservation Management Plan, particularly if works are to be designed in packages or are to be phased. The structure of such a plan is described in the following section.

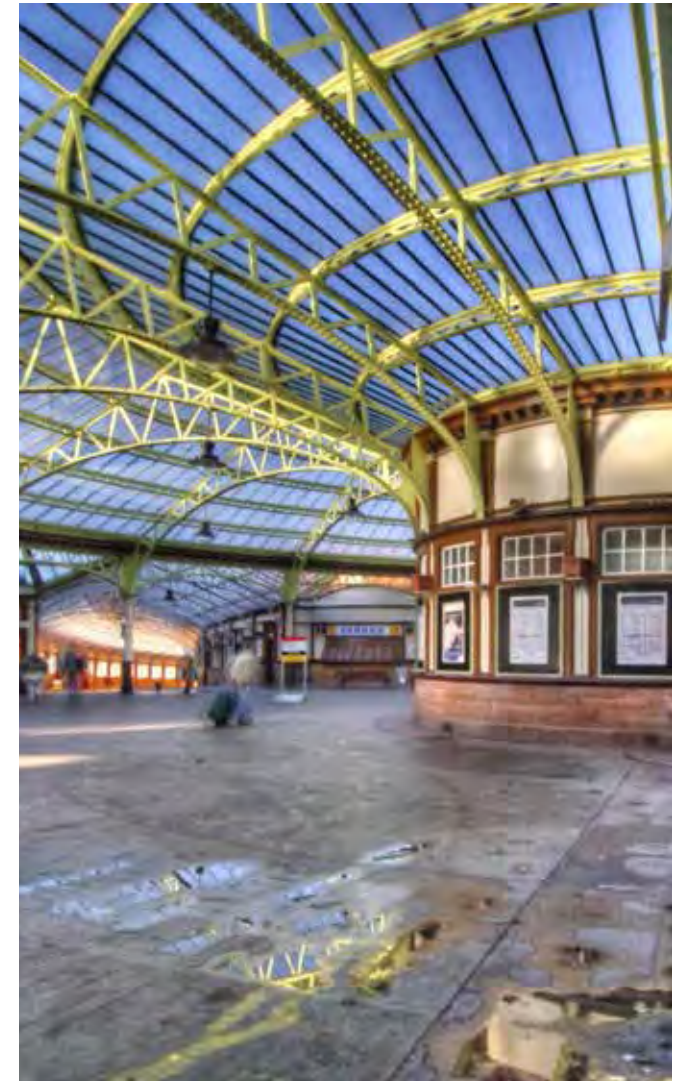
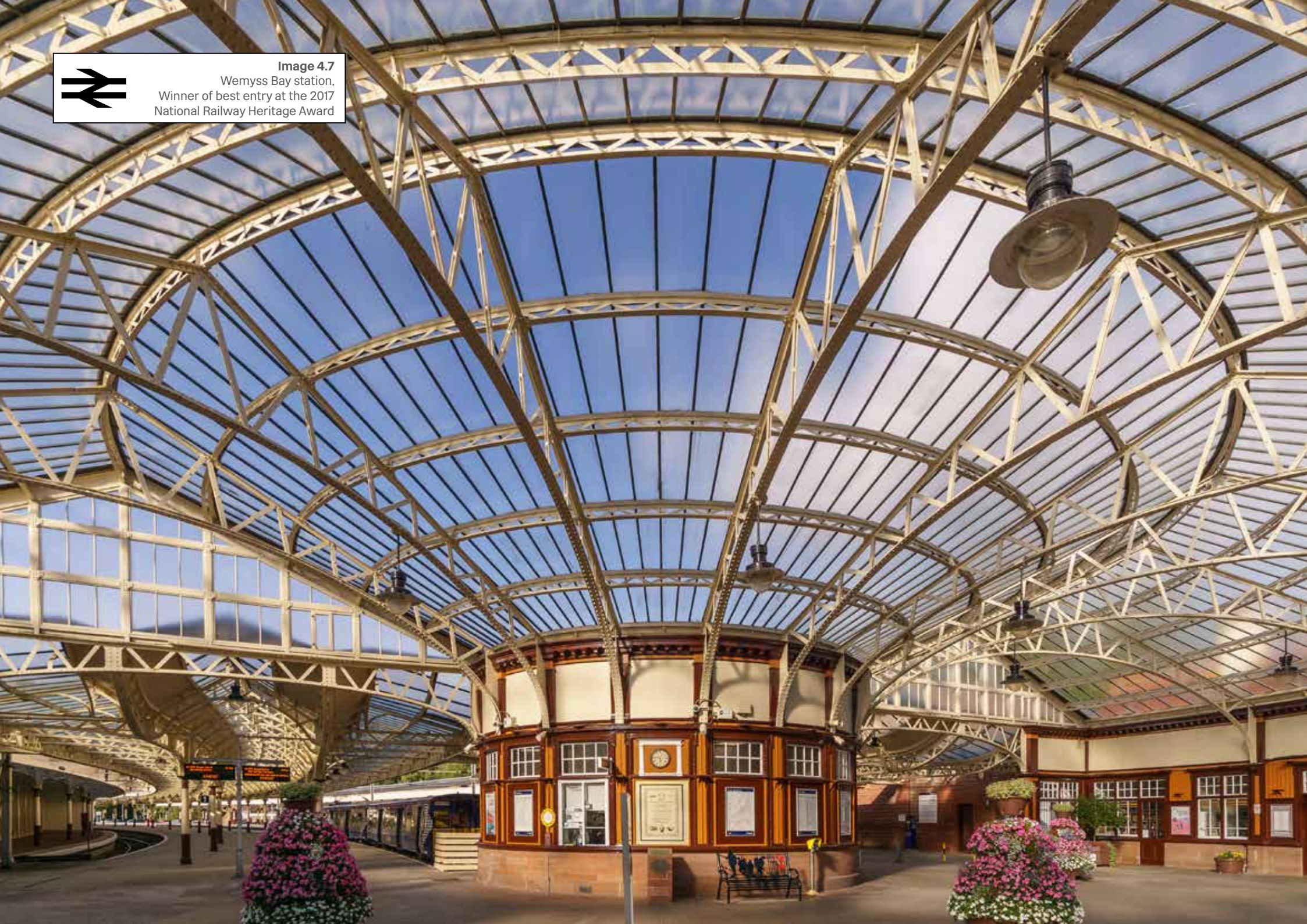


Image 4.6
Wemyss Bay station, pictured
in 2006 prior to refurbishment.
Category A listed.



Image 4.7
Wemyss Bay station,
Winner of best entry at the 2017
National Railway Heritage Award



4.3.1 Purpose of the CMP

For larger historic sites and for complex or very large projects, a Conservation Management Plan (CMP, sometimes known as a Conservation Plan or Conservation Management Strategy) is commonly agreed as the most effective means of demonstrating that a robust regime is in place to respect the significance of the site, the issues pertaining to it and the management processes required to maintain and develop it.

In historic building conservation, a CMP is the first step in:

- Preparing management proposals
- Planning any major repair or restoration scheme
- Planning any new developments
- Managing a programme of regular maintenance

For Network Rail, the usual trigger for the preparation of a CMP is the need or desire to carry out significant redevelopment proposals to a station or a major engineering structure. The requirement to prepare such a plan ensures that operationally or commercially driven objectives can be achieved within the heritage constraints.

4.3.2 Common understanding, preparing the way

A good CMP helps by demonstrating that Network Rail has an understanding of the importance of all aspects of the site and that this importance can be communicated to all those involved with its ongoing care. A properly prepared CMP enables a shared understanding between Network Rail, local planning authorities and the relevant national heritage body of the significance of a site, how it should be managed, and where change might be possible. In this way, CMPs can be an effective first stage in negotiating change and preparing the ground for major planning proposals.

4.3.3 Process

The Heritage Fund (formally the National Lottery Heritage Fund) has the standard guidance on CMPs. The RHT has previously helped fund CMPs for major listed stations. Contact details for the RHT can be found in the appendix.

Regardless of the precise style and contents, a CMP should be easy to use (eg. through the use of drawings and illustrations) and have been developed in consultation with the local planning authorities and the national heritage body if it is to be effective. Suitably experienced heritage consultants should be employed to prepare the CMP. A good CMP should be tailored to the requirements of the site

The process of preparing a CMP can be described as:

- Understanding the site (through document research and fieldwork)
- Assessing the significance
- Assessing how vulnerable the significance is.
- Writing policies for retaining the significance

The CMP sets out:

- Why the asset is significant or has heritage merit
- How that significance is vulnerable or sensitive to change
- What policies are to be adopted for retaining the significance in any future use or development
- The research undertaken could also be invaluable resource for future development and designs.

4.3.4 Headings

A typical structure for a Conservation Management Plan would include the following, adapted as necessary to the site and project:

1. Executive Summary

Introduction and summary of main conclusions

2. Background

Author, scope, consultation process, stakeholder adoption statement

3. Understanding the asset

Analysis of site history, historical phases, important features, management and operation today

4. Assessment of significance

Overall summary of significance, details, components and statutory status

5. Defining risks and opportunities

Identifying risk to significance and opportunities for change and enhancement

6. Conservation policies

Policies for the conservation of the asset to retain significance; prioritise repair and conservation; define a conservation policy philosophy; satisfy statutory requirements; work within available resources; enhance public appreciation; maintain the asset and influence future intervention

7. Implementation and review

Identify next steps (action plan) and review process

8. Appendices

Supporting information



Image 4.8
Newcastle Central station, one of the
major stations with a CMP

4.4.1 Purpose

A Heritage Partnership Agreement (HPA) can be made between a building owner and the local planning authority (and national heritage body) with the objective of streamlining the listed building consents regime, especially for large or complex sites.

Once the agreement is in place, it can reduce the number of occasions when listed building consents are required and thereby save the owner and local authority time and resources. Typically, these are achieved by identifying works that don't require consent or that can be carried out to an agreed specification without the need for separate applications.

4.4.2 Statutory force

In England, the Enterprise and Regulatory Reform Act 2013 provides a statutory framework for this.

In Wales, the Historic Environment (Wales) Act provides the framework.

Scotland does not currently have HPAs.

4.4.3 Form

An HPA can be made up of a number of different components depending on needs of the site.

An HPA:

- should be in writing;
- should make provision for the parties to review its terms at intervals specified in the agreement;
- should make provision for its termination and variation;
- might relate to more than one listed building or part, provided that in each case a relevant local planning authority and an owner are parties to the agreement; and
- might contain incidental and consequential provisions.

4.4.4 On the Network Rail estate

HPAs are still relatively unusual because the process of preparation and agreement can be lengthy. However, in 2019 Network Rail entered into its first HPA for King's Cross Station. This built on the major regeneration project completed on 2012, for which agreement had been reached and detailed drawings been prepared for all aspects of the station. Under the HPA, these are the basis for agreement on matters ranging from ticket machines to public art.

The agreement took two years to prepare, but in the first 12 months of its operation, the station manager estimated it saved making approximately 40 separate listed building consent applications, and it is already an indispensable management tool

4.4.5 Lessons learnt from King's Cross:

- Simplicity is important
- In the absence of a comprehensive project that supplies ready-made agreement and drawings on a range of details, HPAs should be developed incrementally, starting by agreeing items where consent is not required, and adding categories of works as projects create the necessary agreement and groundwork



Refer to Case Study 2:
King's Cross Station

Heritage
Design Considerations

5



Image 5.1

King's Cross station,
Integration of new circulation in
Grade I listed King's Cross

The general principles in this Guide are applicable to the design of works to all listed railway structures. They represent good conservation practice for the repair and alteration of listed buildings. They also show how, when approached with care and understanding, and when presented correctly to heritage stakeholders, it is possible to balance the operational requirements of a 21st century railway with the preservation and enhancement of Network Rail's uniquely important heritage of railway structures.

Design for listed buildings is about much more than like for like repairs or additions which match the architectural style and materials of the original. There are already many examples of striking additions in contemporary style materials which have not only improved functionality but also have added a new dimension to the listed structure, itself demonstrating a new phase in the UK railway's long history of innovation and development. The purpose of the Guide is to add to that list.

In recent years, Network Rail has worked closely with local authorities, Historic England, Cadw and Historic Environment Scotland to develop and agree workable and pleasing designs, and this is a tradition to be encouraged.

Image 5.2
Royal Border Bridge — successful
integration of OLE equipment onto a grade II*
structure, resolving the objections of English Heritage
(Arup, 1989)



Design Considerations

5.1 Guidance

5.1.1 Conservation Guidance

Advice should always be obtained before undertaking even routine works in listed buildings and this part of the Guide is to assist all those involved in the repair, maintenance and alteration of buildings and structures that are recognised as having historic and architectural interest.

Authentic conservation work is more widespread than even ten years ago and many materials found in railway construction are now more readily available. This Guide represents a starting point for the type of works to be undertaken and advice should be obtained from experienced conservation architects or contractors to source specialists, supplies and materials.

Early discussions with the Conservation Officer at the local planning authority, or with the Statutory National Heritage Body can also help in finding solutions. Very good guidance on design, construction and matters of historical accuracy can also be obtained from The Railway Heritage Trust.

5.1.2 Other Published Guidance

Apart from government publications covering the legislation, a wide selection of publications is now available to assist those working to conserve a 'listed building'. These range from general guides to more specialist books that deal in depth with a particular material, type or style of architecture. Some heritage groups also publish Conservation Guides that relate to the building period in which they specialise.

Conservation Areas should typically have a published character summary or appraisal. This should outline the specific attributes of each Conservation Area.

A number of books have been published about railway buildings giving historical and engineering information. These publications can also be helpful in providing an overview of the history of the original railway companies and their design policies. A non-exhaustive list of useful titles can be found in Appendix A.



Image 5.3
Example of Conservation Area
guidance from Fenchurch Street
Station Conservation Area

Design Considerations

5.2 Design Principles



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5.2.1 Introduction

For many professionals working on the railways, listed buildings are perceived primarily as a project risk and it is indeed true that — too often — issues with obtaining the necessary consents cause both programme and cost overruns. But this needs not always be the case, as properly designed and constructed works to listed buildings and other railway structures bring opportunities to enhance both operational efficiency and the quality of the railway experience for all users.

The purpose of this section is to set out a design approach which can be applied to all listed railway structures, from the grandest station to the most functional engineering structure. Whilst primarily aimed at listed structures, it is an approach that can and should be applied to all heritage structures on the network.



Refer to Case Study 4:
New Uses for Old Rooms



Image 5.4

The York Tap - example of a structure being brought back into use for a purpose where it can help generate revenue.

Design Considerations

5.2 Design Principles

5.2.3 Balancing benefit and harm:

Listing (or any other heritage designation) is not about preventing change, but about managing it. The overall aim is to design works in ways that avoid any unnecessary damage (or 'harm' in the jargon of the National Planning Policy Framework) to what is special about the listed structure, that is, the reason why it is listed in the first place.

This means that all designs should be based on a clear understanding — ideally agreed with the local planning authority — of why the listed building is special. This should start at an overall level, but then go down into detail, to identify which parts are of particular importance and which elements are of less importance or even detract from the overall significance. This can helpfully be shown on a coloured-up drawing.

The overall aim is to concentrate the works in these areas of less importance. But it is not always possible to achieve what is required without incurring an element of harm, so it is critical to be able to demonstrate that the harm is 'necessary'.

On the railways, the reasons might include:

- Operational requirements, such as the introduction of electrification or to increase station capacity;
- Safety, such as minimising the need for working at height (e.g. GRP for replacing timber fascias on platforms);
- Maintenance benefit, such as the use of longer-lasting or more durable materials, such as platform paving.

In general terms, the greater the level of 'harm' to the listed building, the more compelling the necessity for the works should be. So designers should approach projects with the aim of achieving the desired result in a way that minimises the 'harm' to the structure.

In discussions with heritage stakeholders and in the reports accompanying the listed building consent application it is necessary to show clearly that the need for the works is genuine and that the proposed solution is the one that causes the least harm to the significance of the listed structure. In the very rare cases where total demolition is proved to be necessary, the quality of the replacement design is itself an important part of the argument.

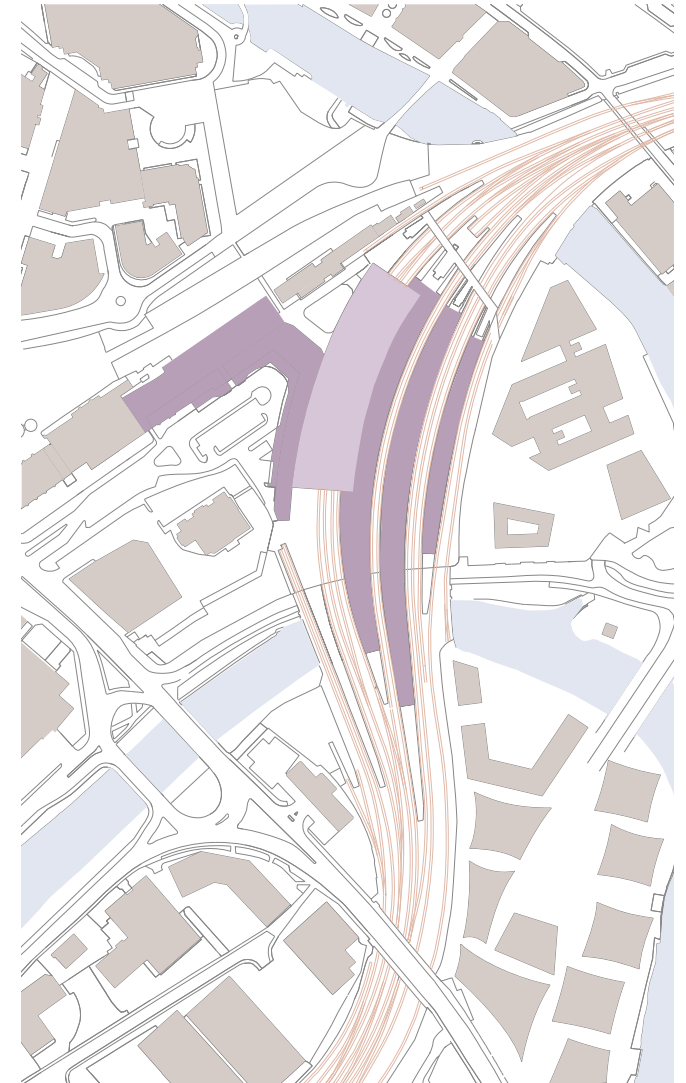


Image 5.5
Plan of Bristol Temple
Meads station

Design Considerations

5.2 Design Principles

5.2.4 Designing out heritage risk:

For a listed building consent application to proceed as smoothly as possible, there are a number of ways that designers should approach their work.

The first is by challenging Standards where — as is often the case — they are principally intended for new structures rather than adaption of existing ones. A very good example of this, was a challenge by the Great Western design team that demonstrated that a less intrusive and destructive alternative to the 1.8m solid parapet — a railing with in-built mesh above the existing parapets — could satisfy the aim of the Standard in an acceptable way. Even if the Standard cannot be effectively challenged, heritage stakeholders normally expect the designer to have tried.

The second is by careful thought about the architectural idiom and materials to be used. In many cases, it is right for the work to match the existing building, but there should also be cases where it is either not possible or desirable. In this case, the designer should adopt a contemporary style which is appropriate for the purpose of the new work — a new entrance should be clearly signed as such — and be in harmony with the listed building. The same is true of the choice of materials.

Reversibility is an important concept which designers should bear in mind. With the needs of railways changing constantly, it is often the case that today's requirements may no longer apply in the future. Where possible, alterations should be designed so that they

can be removed with a minimum of residual damage to the original structure. The previously mentioned bridge parapet railings were designed with this in mind.

It is also good to look for opportunities to remove clutter and other intrusive features which are damaging the significance of the listed structure. The restoration of lost features — such as finials or chimney pots — is another area where the Railway Heritage Trust might be able to help with advice and grant aid.

As noted above, designers should be aware of the level of information (typically RIBA Stage 3) which is required for a successful listed building consent application. This is far higher than required at the equivalent GRIP stage and the design and delivery team should be made aware of what is expected of them and when. This is set out in the attached flow chart and table, refer to appendix B.

An important related point is that listed building consent cannot be granted an outline approval. Designs should be fully detailed and, once consent is given, the project should be completed in exact accordance with the submitted drawings and details.

Any variations are likely to require an entirely new application, with significant programme and cost implications. Among other things, this makes it all the more important that designers have a full understanding, not just of the history and significance of the structure, but of its condition and structural form, so that their proposals are soundly based

to minimise amendments due to unexpected discoveries after the consent was granted.

It is possible to leave certain details of the design to be developed post-consent and these should be covered by Conditions imposed on the listed building consent. This is not without challenges, since discharging consents takes time and should be factored into the overall programme, particularly where discharge is necessary before work on site can start. All this emphasises the importance of assembling the right professional team, from the heritage specialist, through to the conservation architect and a contractor with the right experience of working on listed buildings. With a good team, the process and the result should be an enjoyable experience.

Image 5.6
Kettering Canopy brackets
prior to dismantling



Design Considerations

5.3 New Interventions

There are many successful examples of confident contemporary additions to historic station fabric. These can be subtle or exuberant, like the roof structure for the new concourse at King's Cross station. Different approaches could be applied to different elements within the same station and as part of the same station upgrade. Whichever approach is taken, the best projects draw intelligent inspiration from what surrounds them and recognise and respect history and context.

The right approach for each intervention should be found in examining the context for any proposed development in great detail and relating the new building to its surroundings through an informed heritage assessment and character appraisal. This does not imply that any one architectural approach is, by its nature, more likely to succeed than another. On the contrary, the blind application of a simplified formula is more likely to fail regardless if the formula consists of 'fitting in' or 'contrasting the new with the old'.

5.3.1 Considerations for a successful project

The proposals should relate well to the geography and history of the place and the lie of the land. They should sit happily in the pattern of the existing development and the routes through and around it. Good design should consider and respect important views, and respect the scale of neighbouring buildings.

For successful integration with existing buildings one should always analyse and understand what is historically, architecturally and culturally significant about the place, and how this can be reinforced. Significance could lie in exteriors, the arrangement of spaces or particular details. These in turn should provide inspiration for way the new work responds, for example in its overall form, the choice of datums or use of materials.

The hierarchy of old and new parts should be considered. A contemporary upgrade should enhance the station as a whole and celebrate the historic fabric, not render it subservient. This is not to say that the upgrade has to be low key. Many historic station buildings are sufficiently large and confident in their own right not to be overwhelmed by bold new architecture.

High quality materials, detailing and building methods should be used with careful attention paid to junctions between the new work and the heritage fabric. Low budget materials and inelegant details can be severely detrimental to historic buildings.

Design Considerations

5.4 New Equipment



5.4.1 Ticket Machines

Ticket vending machines should be in a place convenient to passengers. For example, in ticket halls, foyers or sometimes on platforms. However, even whilst meeting the needs of passengers and Train Operating Companies, these machines should also be situated to minimise adverse visual impact on the station building. They should not obscure key architectural features such as windows and should be located so as to allow future maintenance and cleaning of adjacent structures.

Service runs to the machines should be hidden or concealed. Where this is not possible the routes should be located as discreetly as possible and painted to match the background. Where floor runs are inevitable and they disturb historic fabric, that fabric should be made good authentically. Floor mounted service runs should be neatly installed and any floor finish made good. Cable trays should not be used where they should be publicly visible.

5.4.2 Ticket Gates

The principles for siting the gates follow those applying to ticket machines, although the location is further constrained by passenger flow and space requirements. Although the height of the equipment is less than that of ticket machines the overall effect on a ticket hall foyer can be detrimental due to the collective bulk of machines and associated gates, lighting, CCTV and staff areas. Care should be taken to minimise the impact by a review of alternative sites and the possible design of bespoke solutions where necessary.

Associated signage and service runs also should be carefully sited and special care should be given to any historic fabric that should be respected.

5.4.3 Ticket Counters

Most ticket offices usually comprise a security glass screen with speak through devices having electronic enhancements for the hard-of-hearing, electronic passenger information and a cash till read-out. Where installations are required the sites should be thoroughly understood before design work commences. Where a traditional booking office window has been inherited requiring operational modernisation, the options of upgrading should be investigated before renewal or replacement are considered.

Where an original ticket window cannot be modified the window and equipment such as queue stalls, built-in signage may be relocated for preservation elsewhere either in the station or at a heritage site, provided their removal can be achieved without damage and all necessary consents are obtained.

Design Considerations

5.4 New Equipment

5.4.4 CCTV

Care should be given to the installation of CCTV cameras and their service runs. It possible for cameras to be smaller or concealed and these should be used in more sensitive sites. While the design of the camera might be of good quality it can often be let down by crudely manufactured support brackets and poles. The visual impact of these fittings should be minimised by careful design.

5.4.5 Signage

Orientation in large, complex stations has always been difficult for passengers arriving for the first time. Signage and way-finding is an vital element in any station and simplicity should be a guiding feature of its design. Although they should be instantly apparent, signs and way-finding boards should also be consistent in design, carefully sited and not positioned in such a way that they obscure views of the building or hide important architectural features.

5.4.6 Lighting

Lighting in historic buildings has to respond to both the aesthetics of the building and the task for which it is installed. Where original fittings exist, and can be adapted to current operational requirements, they should be considered for rewiring and re-lamping in a sympathetic manner.

The design of light fittings should be individually tailored to the location. To achieve an overall scheme that works well throughout the building it is advisable to consult a lighting designer. The inclusion of new light fittings might have planning implications.

The service routes are often not considered sufficiently at the design stages and should be considered with utmost care.

5.4.7 Lightning Protection

Tapes fixed on a building as part of the protection system against lightning strike should not be installed in a way that disfigures the external elevations of a listed building. Often, such an installation is considered of minor importance and routes for tapes and the location of spikes are left to the installer without any consideration of the impact on the building's heritage. The entire installation should be agreed with the local planning authority, and with the Statutory National Heritage Body prior to the order being placed with a contractor.

In cases where a lightning protection system has already been attached to a building but requires updating to meet current technical standards, the preference is to retain existing tapes routes rather than relocate. Information about the existing system and routes of lightning tapes on drawings should always be made available for use in any discussions with the local planning authority and the Statutory National Heritage Body.



Image 5.7
Integrated platform signage, CCTV and customer information screens at King's Cross station, Grade I listed

Design Considerations

5.5 Containment of Services

CCTV, new customer information systems, ticket machines and electronic control gates are regularly installed in new locations, greater quantities or in stations that have previously had manual controls.

When not full considered and integrated, the equipment, the associated service runs and supplies have a hugely detrimental impact on station buildings.

Careful attention should be given at the earliest possible design stage to the service supplies to all such equipment. In all cases, the routes should be discussed and agreed with an architectural advisor before installation. This should not be left to the installation contractor. Cable trays should not be used where they are visible to the public.

All services routes should be hidden or concealed wherever possible. When this is not possible the run should be minimised and designed sympathetically to the architecture, so as to avoid theft or unauthorised access. Care should be given to the visual and spatial impact of services that require separation distances, especially if they cannot be concealed. The drilling of surface finishes such as stone, ceramic faïence and brick is strongly discouraged and should be avoided in all instances, unless there is a compelling reason to do so.

The finishes should match or compliment the background colour. Care should be taken to confirm equipment is selected to the right size and colour for its location and use. Some items, such as information monitors, are likely to be standard but the visual impact can be mitigated by careful siting, attention to the design of the fixings and careful routing of the service supplies.

If new equipment is being added to existing sites that are being served by insufficient service runs, then the existing runs should be rationalised where possible and the new runs organised to take a more appropriate route. Existing routes should not be utilised without consideration of the visual impact, simply because they are more convenient. Redundant runs should be removed when installing new runs.

Even when the design of service runs is carefully considered in the design stages, the risk is that during the execution stages short cuts might be sought to deal with difficult spatial or time constraints. One should always confirm that designs are implemented to the original plans and sufficient time is also allowed for verification and approval of the work before contractor leaves the site. .

When adding to service runs, there should be consideration of future capacity that might be required, and additional provision should be included.



Image 5.8
Good example at Paddington station of cable containment without negative impact to architecture

Many historic buildings contain artefacts of great value that are often not recognised for their importance. If the artefacts have not been photographed and recorded for size, colour, special markings this should be carried out. It might be necessary to bar-code objects as part of a computerised inventory so that data on the existing location, cleaning and repairs can be regularly monitored. This information would also be useful to the police should the artefact be stolen.

Although the removal of artefacts from their original location in an historic building is not generally allowed, there might be occasions when relocation is necessary, subject to the provisions of the protective legislation described in Section 3 of this Guide and always after contacting the RHDAB. Items such as clocks, fireplaces, furniture, signs, posters and early equipment should be carefully removed and fixed in a suitable new location, preferably within the same premises.

Sometimes it might not be possible to re-use original features and where this occurs the items concerned should be offered to a local Railway Preservation Society, a local museum or another bona fide organisation. Some items might indeed be rare and in this event, the National Railway Museum at York should be contacted to establish whether they could be added to the National Collection.

The railway is the only industry that has specific legislation protecting its heritage. The Railway Heritage Act enables historically significant artefacts and records that are operational within today's railway industry to be 'designated', protected and saved for the nation so that future generations should be able to understand the history of the railway in Britain. NR has on its website a Railway Heritage Designation page with links to lists of designated items.



Image 5.9

Zero post at York Station, located at the centre of York Station and used as the measurement point for ten of the North Eastern Railway (NER) lines.

Heritage
Existing Elements

6



Grade II listed

Existing Elements



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This section offers general guidance on the approach to repairs and building work on the more common station building elements and where problems have been experienced.

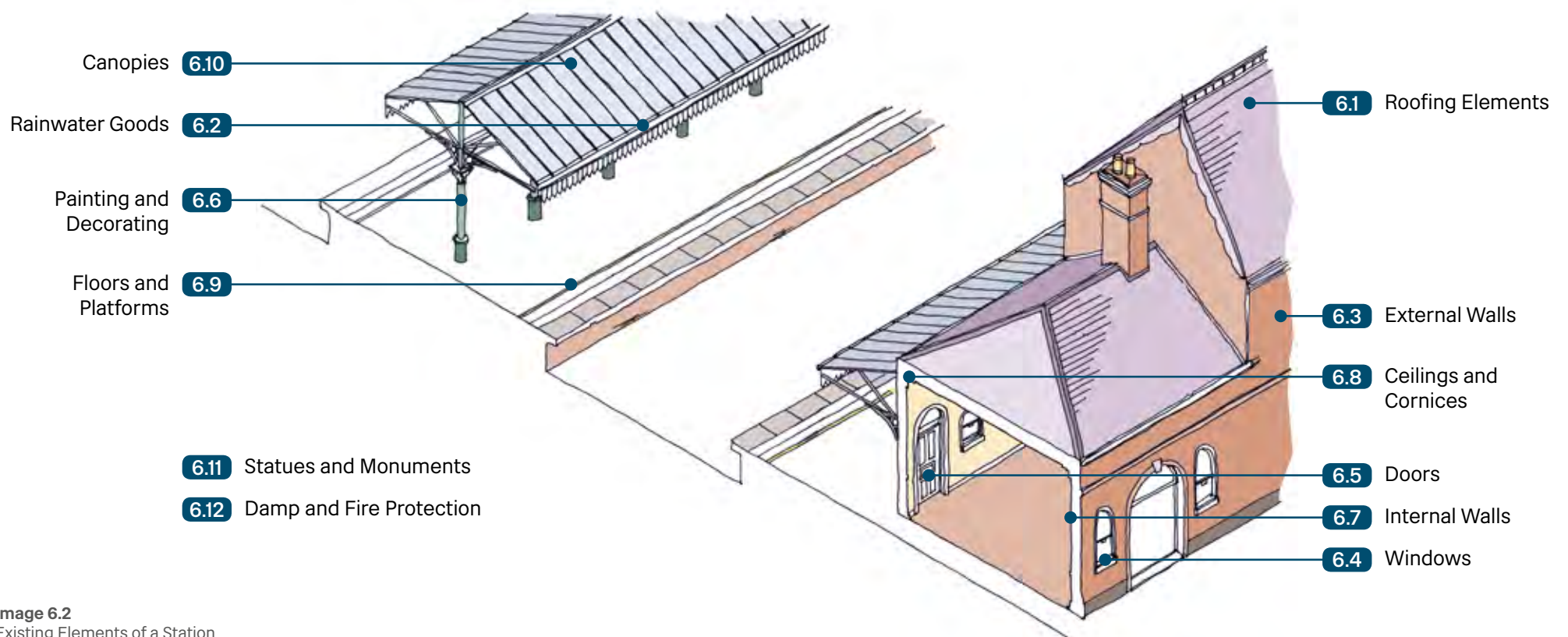


Image 6.2
Existing Elements of a Station

Design Considerations

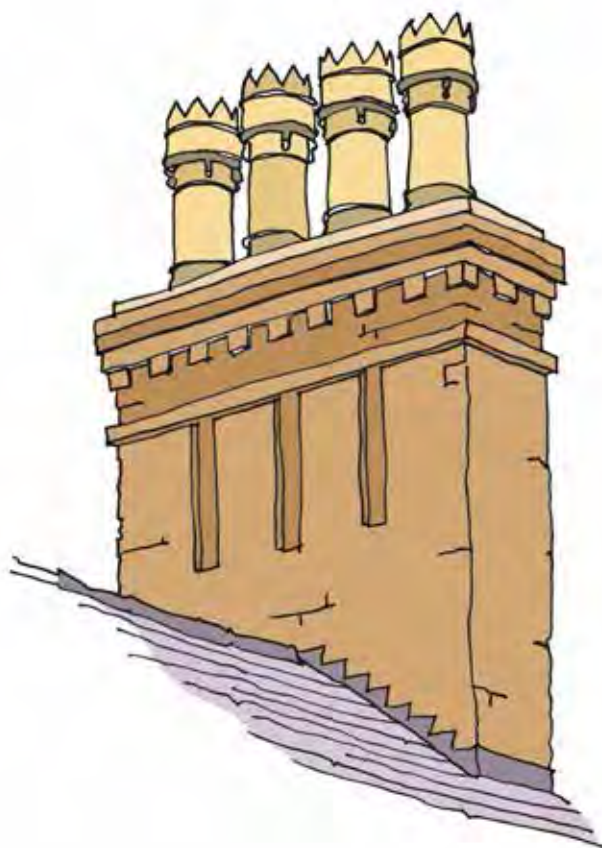
6.1 Roofing Elements



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For the majority of historic buildings, the roof has a natural dominance. This is particularly so with railway stations, where it can be the major visual element in a landscape. In respect of smaller stations retention of the original shape, pitch, cladding and ornamentation is of great importance. It might well incorporate dormer windows, lanterns, turrets, spires, bell-cotes and cupolas as well as ornamentation such as ironwork cresting, ornamental ridges, finials and gargoyles, all of which should be retained, restored or replaced where possible. In the larger stations with shed roofs, The design integrity of the original should be respected even where a new material is introduced for structural reasons, as for example the new roof claddings in Manchester Piccadilly or Paddington.

Chimneys often determine the overall character of a building and original chimney pots are frequently a decorative feature in their own right. In addition, chimneys usually perform additional functions, such as providing ventilation or giving structural support, which removal or alteration could jeopardise. Chimneys should not be demolished even when considered redundant due to disrepair, unless there is a compelling reason. In some cases, there might be a good reason for a missing chimney to be rebuilt and grant assistance should be sought in such instances.

Insensitive alterations, renewals or poor maintenance can have a disproportionate impact on a building, for example the removal of chimneys or replacement of original roof coverings with finishes that have a different scale. Broken or slipped slates or tiles should be replaced as soon as noticed with matching materials fixed in the same way as the originals or, if not possible, then in a visually discreet manner.

The ventilation of roof spaces is also critical in maintaining a building in good condition and all grilles and openings should be maintained and reinstated if blocked.

Although most pitched roofs on listed properties are likely to be of slate or clay tile, there are many other materials in use throughout the rail network where most building styles and materials are represented. Shaped stone slates, tiles and the patterns and colours in which they are laid are often a distinguishing feature of roofs that might have geographical and regional importance.

Image 6.3
Chimney breast detail and roof
interface at Scunthorpe station

Design Considerations

6.1 Roofing Elements

In roof replacement, faithful replication should be the first option to be considered. Where not possible, due to unavailability or budget constraints, materials with similar visual characteristics and performance should be chosen. Where the appropriate material is no longer in production, it might be possible to substitute from another less visible part of the building or to source from a reputable architectural salvage company. With stone, slate or old tile roofs, all visible pitches should retain the original finish.

Substitute materials should be chosen with care as modern equivalents might be heavier than the original covering. Roof structures might only have been designed to carry the weight of the original material, and major problems can be caused with the substitution, for example, of slate by concrete roofing tiles.

There are, however, exceptions and slates have been known to be replaced by clay pan-tiles in cases where it was confirmed that these were the original material. The priority should always be to prevent water ingress and a change of material and detailing might sometimes be the better solution.

Whenever undertaking works to existing buildings, earlier and inappropriate repairs should be rectified. This should include the removal of crude 'emergency' repairs such as 'Turnerising' or 'Flashband' where they disfigure the appearance of the building.

Repairs should never be undertaken by covering existing tiles or slate with bitumen or other substances that might prevent their eventual reuse. Temporary repairs should be carried out when they are necessary to stop water penetration and worse damage occurring while a more permanent solution is being procured. In these circumstances, the choice of methods should be limited to those that are quickly reversible without damage to the fabric of the building.

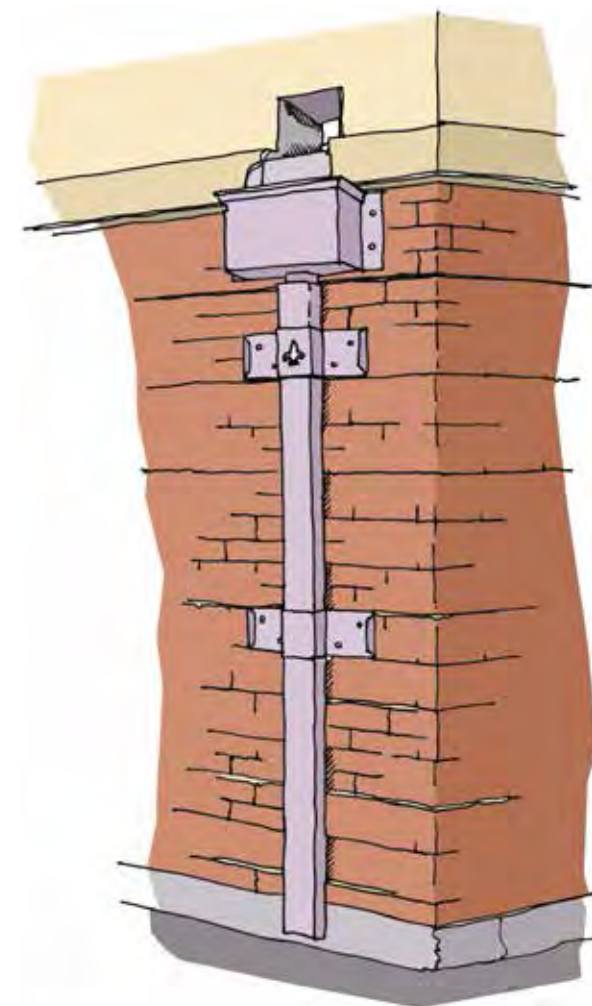


Image 6.4
Rainwater goods — replacement lead hopper and downpipe, reproduced in style of original at Bishopstone station, Grade II listed

Design Considerations

6.2 Rainwater Goods



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The maintenance of a roof and its drainage systems is probably the single most important element in the long-term preservation of the building. The biggest causes of rot in buildings are poor drainage, leaking rainwater systems and rising damp. If neglected, through lack of regular maintenance, the entire building can soon begin to decay. If left to fail, the building and its inherent value could deteriorate rapidly and lead to additional and unnecessary costs in putting matters right.

Generally, authentic repairs or complete replacements are the most economic and beneficial solutions. All elements, including flashings, gutters, ridges, copers, rainwater pipes should be adequately sized, well-detailed and in good condition to be effective.

Where gutters and downpipes should be replaced, they should generally be materials with similar proportions and design details, especially if they were designed to sit in recesses or on specially formed ledges. Replacement using inappropriate materials can compromise the building even by seemingly minor alteration to rainwater goods. Where cast-iron or lead was replaced by PVC products, consideration should be given to the reinstatement of the original material in particular if it is visible.

When replacing on a like-for-like basis, one should check the volume of rainwater to be disposed of by using data for the worst exposure in the calculation — especially to cope with potential climatic changes. Even a small increase in the number and diameter of pipes and gutters should help to protect the historic fabric from rain water spilling over gutters and down the face of a building. Hopper heads and collecting sumps should incorporate an overflow that can bring instant attention to a blockage. Key drainage points should be regularly inspected and cleared.

Most traditional materials can be repaired or replaced by craftsmen having the appropriate skills. Leadwork should be replaced on a like-for-like basis where possible and should not be painted over. Fixings should be discreet and match the material or section to be fixed. Galvanised mild steel brackets should not be used as a substitute for wrought iron or cast-iron brackets if avoidable. Care should also be taken to prevent bi-metallic corrosion caused by allowing contact between different metals.

Many downpipes on traditional railway buildings have been hidden in cast-iron columns or masonry structures particularly in canopies or the larger sheds. Some of these are impossible to repair and should be replaced by accessible substitutes. Minimisation of the numbers of downpipes should be considered and modern methods of drainage such as syphonic drains may have to be adopted.

Where there is a danger of damage to downpipes, particularly cast-iron or lead, on external walls, provision of protection such as bollards or railings should be considered.

When building works are in progress, maintaining the free flow of rainwater and other drainage systems is often overlooked. A major cause of concern is when water is being used to clean the exterior or interior of a building. Prior to such work, one should establish if the disposal of the additional volumes of water is achievable using the existing pipework because it might be necessary to install a parallel system to be drained off elsewhere. Whatever the outcome of calculations, existing pipework should be flushed through to confirm it is free-flowing before water cleaning begins. Because the cleaning should remove large amounts of dirt and the debris, drainage outlets should be provided with a fine mesh grating to stop the drainage pipework from being blocked and flooded, a problem that might not become apparent until sometime after the cleaning is finished.

A method statement on the means of disposal of chemicals from the run-off of cleaning should be provided to the local water company when there is a risk of contaminating the local water supply..

Design Considerations

6.3 External Walls

External walls can be found in almost every architectural style and type on the Network Rail estate. The materials used range from timber-clad, timber-framed structures to load-bearing brick and rusticated granite. Provided water in all its forms continues to be effectively excluded from the building or structure, the walls are likely to be more damaged through misguided maintenance than through natural wear and tear. For example, cleaning of some stone using high pressure water can cause more harm than good.

Maintenance of existing walls should respect the original construction method and be repaired only where necessary on a like-for-like basis. Note that brickwork sizes have changed over the years and it might be necessary to manufacture specials to match the originals.

It is not just brick colour and texture that determine the appearance of brickwork. The type of mortar, its colour and style of pointing are major contributors. This is especially important to consider when repairing small areas of existing walls. Care should be taken in selecting the correct materials, not just for appearance but also performance. This is particularly important where lime mortars have been used with soft brickwork. However, great care should be taken when specifying a 'like-for-like' repair because assumptions about the earlier work might be inaccurate. A mortar analysis, at relatively low cost, can prevent some very costly mistakes. Pointing should be in a consistent style. Similarly, when repairing stonework, care should be

taken to match the types of stone, mortar and fixings. A petrographic analysis should be made whenever there is any doubt about the origin of the existing stone. It is advisable to avoid mixing reconstructed stone with natural stone. The choice of mortars and renders should be carefully considered. The different movement characteristics of non-matching fixings can result in structural failure.

Some stations are clad in terracotta or its glazed form, faience. These are very specialised materials and expert advice is required when specifying remedial or replacement works. The damage caused to terracotta by, for example, cleaning with acid is irreversible. Where a block or tile is badly damaged and has lost its structural integrity, it can be cut out and replaced with a new matching block or tile from a specialist manufacturer.

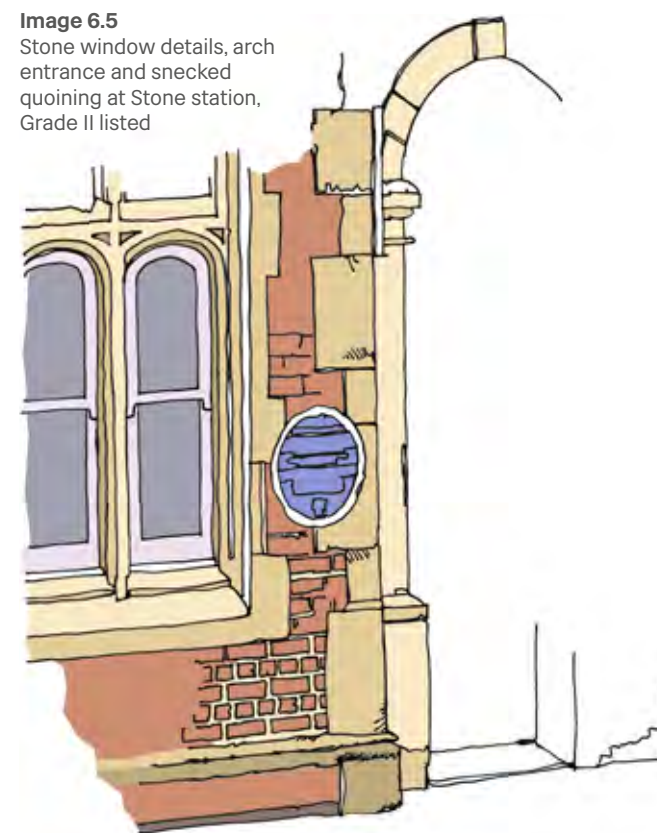
Where ledges or mouldings are incorporated into walls they should be maintained in good condition. Where they might collect water as a result of their shape, they should be properly flashed, generally with lead. If mouldings and projections are not repaired differential wetting and staining of the wall might occur, leading to possible deterioration in the wall's condition.

In respect of surface treatments, such as waterproofing or anti-graffiti barriers, these should generally be avoided or specialist advice taken before application. Such treatments can change the appearance of materials and dampness can be sealed in, inadvertently, worsening the rate of deterioration.

In any event, removal or repair of the coating, should it fail, can be a costly item and cause more damage.

Where external materials are used internally, for example in larger halls and sheds, then the same care should be taken as if they were being used externally.

Image 6.5
Stone window details, arch entrance and snecked quoining at Stone station, Grade II listed



Design Considerations

6.4 Windows

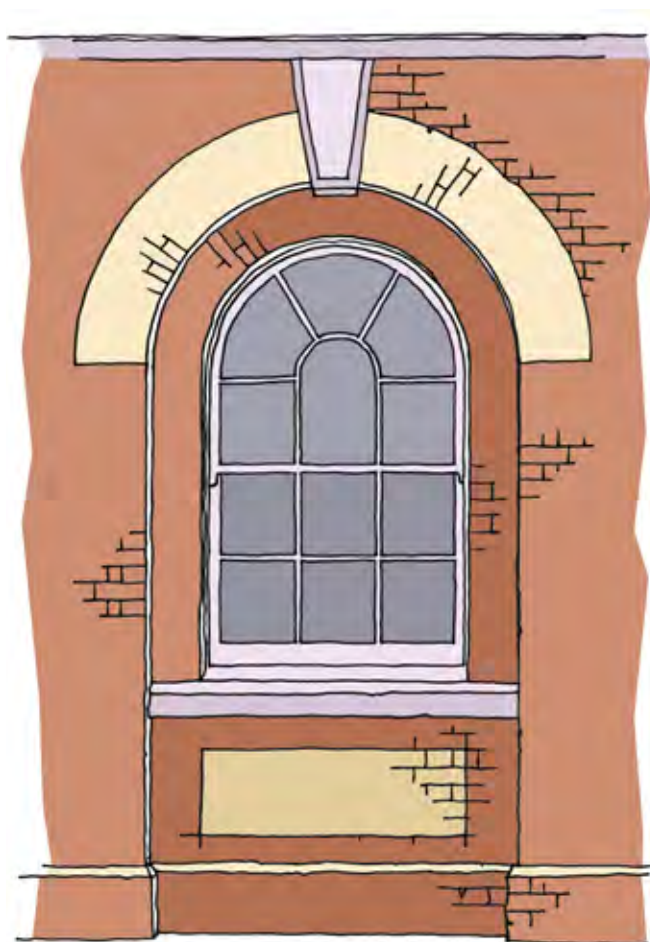


Image 6.6
Sash window at
Snodland station

Alterations to the original external windows can have a discordant impact on the exterior. Wherever possible, such elements should be repaired or reinstated to the original pattern, profiles, materials and finish. Care should be taken in selecting the correct glazing bars and frame sections when matching existing windows.

Original glass should be retained and protected during any construction work. All replacement glass should match the original in colour, weight and appearance. The uneven surface of older types of glass adds sparkle to a façade whereas modern float glass can make a listed building look worse. Where obscured glass is used, it should be of a consistent pattern, and not piecemeal. New double-glazed aluminium or PVC units are not normally suitable additions to historic buildings. Even apparently 'identical' replacements might not be historically correct and are usually inappropriate.

Where double-glazing is required for sound or energy insulation, and where the original windows are in good condition, other options such as discreet secondary glazing should be explored, as should a full overhaul and draught-stripping of the original windows, for this can bring a marked improvement which might satisfy requirements. The material, detailing and fixing of the secondary frame should, however, be well thought out, as should requirements for smoke venting and ease of opening by the Fire Brigade.

However discreet they might at first appear, secondary glazing units may have to be camouflaged with carefully chosen colours.

Where windows are to be extensively repaired, replaced, or simply overhauled, consideration should be given to access and safety of maintenance and cleaning. Retained sashes should have the correct weights attached for smooth operation.

In some situations, it may be necessary to install safety glass or to add security films. Laminates of glass / polycarbonate / glass (GPG) are available that can include old styles of glass for the exposed surfaces. These can be obtained in a thickness that might fit the depth of existing rebates.

Design Considerations

6.5 Doors



6.5.1 External Doors and Fan-lights

Alterations to the original external doors and windows can have a discordant impact on the exterior. Over time many could have been damaged or inappropriately maintained or repaired. Where doors are retained, they should be restored to the original pattern, profiles, materials and finish. See Section 6.4 for advice about maintenance and replacement of glazing.

Door-cases, foot-scrapers, pediments, columns, pilasters, cornices, should not be damaged and retained even if the door way is redundant. Repairs to such elements should always be authentic.

Where fanlights were part of the original design they might have been covered or altered, possibly by insertion of ventilation units. Every opportunity should be taken to reveal and restore fanlights to their original pattern and material.

Often door ironmongery has been damaged or replaced. All original ironmongery, including butt hinges, locks, handles, escutcheons, decorative studs and grilles, should be retained, cleaned and secured in place. Inappropriate kicking plates, finger-plates and other applied protective elements should be replaced by new elements that are in keeping with the originals. Any additional security that is needed should be provided by additional suites of sympathetic design or in some cases by substituting the hidden mechanisms. Door closers and other mechanisms should be discreet and on external doors should be fixed on the inside face. Where inappropriate signage has

been applied to a door this should be removed. Self-adhesive signs might damage layers of polish or paint when removed and should not be used. If new signage is necessary it should respect the construction and design of the door and be fixed in such a way as to be removable without damaging the original.

6.5.2 Internal Doors

Internal doors are more likely to have been altered or replaced over the years. The conservation policy for each location should be made on an individual building basis. Original doors should be retained and repaired. All new doors should be on a like-for-like basis and match those proven to be contemporary with the building.

Where doors have to be upgraded, for example in connection with enhanced fire protection, this might be possible with approved surface treatments and the insertion of intumescent strips and smoke seals into both the door and frame. In panelled doors, the weakest part is usually the thinning of the panel that allows it to be held in the main frame. Sometimes it is possible to add a discreet new panel and mouldings to one side of a door over a layer of fire resisting material. While painting and decorating is perceived as a simple operation, there are specific issues concerning paint finishes in the railway heritage context that should be considered carefully. In addition to the choice of colour sympathetic to the building and appropriate to the



Image 6.7

External door on platform with fanlight and Terracotta detailing at Nottingham station, Grade II* listed

element of fabric are: matters of access, safety, application technique and long-term performance to be considered

Whilst accepting that painted finishes are ephemeral by nature, a poorly chosen or badly executed colour scheme can have a disproportionately detrimental impact on a building. It should also be remembered that changing a colour scheme once applied, as opposed to repainting within the maintenance programme, could be a costly item especially where track possession can complicate the access.

Higher performance, longer lasting paints should be used in inaccessible spaces or where the repainting of adjacent buildings would disrupt train movements. In such safety critical circumstances, the use of historically correct paints and colours may need to be moderated.

Colours are applied to appropriate parts of buildings that reflect the livery of the railway company in occupation. However, there are general 'rules' that should help to achieve a recognisably 'branded' building whilst respecting the historic fabric. It is usually better to use neutral or light colours on soffits, at high level and on other less accessible structures that are likely be repainted least often in the maintenance programme. More readily accessible elements offer scope for less permanent decorative colour schemes where they can be quickly changed or refreshed.

Where it is felt that an understanding of the original

colour scheme would be beneficial, specialist help might be needed to establish the original colours or patterns, particularly where later materials such as panelling, wall tiles or glazing hide the painted surface. In sensitive cases, careful site analysis and paint scrapes should be used to establish the original colours or stencil patterns where they are known to have existed. Original colours and wallpapers can be found behind light switches and other attached wall-fittings and hidden behind later alterations.

Most paint-work found on older railway buildings and structures contain lead. Sometimes earlier lead paint might be hidden beneath layers of more recent lead-free coatings. Statutory guidance is available in respect of its safe removal but the scale or magnitude of the problem should not be underestimated, particularly on the larger station shed roofs. Although lead paint can no longer normally be used, there are Grade I listed buildings of high historic importance where it can be required and special permission for its use might be granted.

In respect of performance, paint selection should reflect the need for any underlying historic material to perform technically — for example, expansion, contraction or permeability. It should be remembered that modern products differ from older ones and new paint films tend to dry and create tensions that can detach earlier finishes. In such circumstances, it might first be necessary to strip the original paint using a suitable removal system that has been evaluated by testing prior to use.

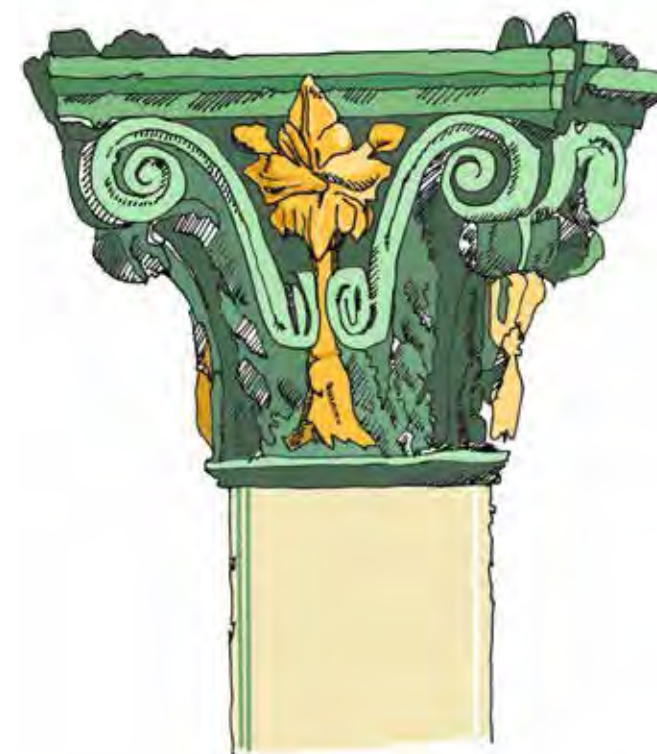


Image 6.8
Colour schedules require research into establishing original colour — example from Manchester Piccadilly station, Grade II listed

Design Considerations

6.7 Internal Walls

Traditional internal walls are mostly plastered and have been painted and redecorated at regular intervals over the years. However, many still retain original tiling, sometimes ornamental, and many retain a timber-boarded dado. Often walls have been neglected or damaged by inappropriate fixings of equipment or services. Mouldings might also have been removed or damaged by built-in furniture and fittings.

Whilst not advocating wholesale reinstatement of missing elements, care should be taken to protect any historic elements that remain, particularly if decorated in such a way as to be unique to the railway, as for example the railway routes incorporated on glazed tiles in London Victoria station and across the former North Eastern Railway (NER) routes. Tiling, such as that at Worcester Shrub Hill, should be treated with great care and only repaired or maintained with specialist advice.

Services mounted on the wall surface should be removed when an opportunity presents itself and new runs should be either concealed if possible or managed in a way that does not clash with existing heritage.

Surface mounted items such as timetable boards or advertisements should respect the elements of a wall and not cut across items such as dados, niches, panels or mouldings. Where possible use should be made of existing disused fixing holes.

Where plaster is to be repaired, matching materials should be used or 'disruption' might occur at junctions between old and new work. Analysis of the existing plaster can be very helpful in sorting out the mix to be used.

When injected damp-proofing works have been carried out the type of plaster to be used should follow the information provided by the supplier.

Where waterproofing renders have been used, fixings should not be made through them but only into specially made pockets of solid render otherwise the guarantee might not apply.

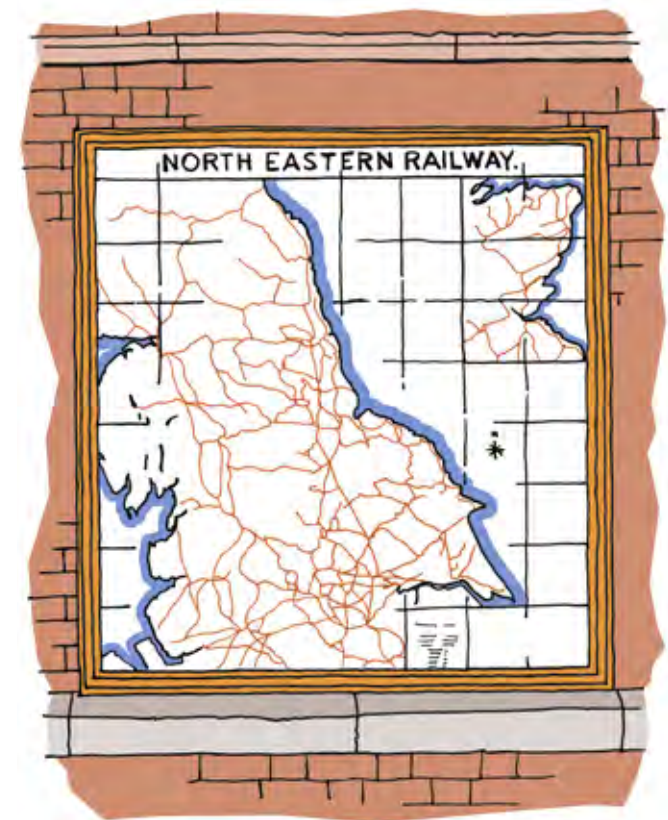


Image 6.9

Polychrome tile map of the North Eastern Railway network at Tynemouth Metro station, Grade II* listed. This is one of 23 installed by NER. This is on an external wall, under a large glazed canopy.

Design Considerations

6.8 Ceilings and Cornices

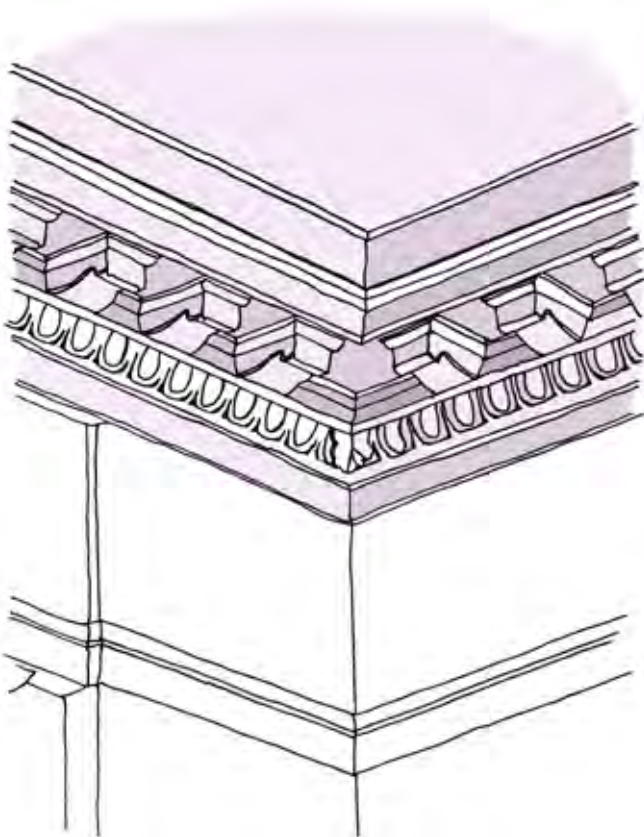


Image 6.10
Cornice detail at Manchester
Victoria station, Grade II listed.

The ceiling is often a major element in creating the overall character of the interior space and can be the most dominant feature in a room. In older premises ceilings and cornices were damaged when conduit to light-fittings and other service pipes were introduced.

In some cases, false or suspended ceilings still hide original ceilings from view with hanging systems fixed through holes penetrating the plaster in order to reach the structure above. Where possible ceilings and cornices should be restored on a like-for-like basis with later fittings or attachments, including suspended ceilings removed or relocated. Where thick layers of paint obscure cornice details the paint should be removed. Where chemical stripping is required, caution should be exercised as they might not be made of plaster and chemicals can dissolve the moulded decoration.

Feature lighting should be considered to compliment the ceiling and to illuminate it beneficially. The choice of functional lighting should follow the standards recommended for the use to which the room should be put.

The choice of illumination should be in a colour to complement and highlight the colouring in the building, whether it is in brickwork, tiling or a painted finish; the fitting itself should be unobtrusive.

When contemplating running new services through a void in the ceiling of a room or space with a ceiling that might be removed at a later date, an appropriate route should be identified that respects the original space to avoid the need to reroute the services when the ceiling gets removed.

Design Considerations

6.9 Floors and Platforms

6.9.1 Floors

Most ground level floors in stations have been either rebuilt or re-laid during their lifetimes. Original flooring materials, such as encaustic tiles and wood blocks, do, however, exist in some buildings. Where these remain in an operationally acceptable condition, they should be authentically repaired and retained. It should be noted that in some wood block floors the bitumen bedding also acts as the damp-proof membrane and might be difficult to repair or replace.

When selecting a new flooring material or considering the extended use of an existing surface, thought should be given to both durability and slip resistance. Tests might be required to determine whether a slip-resistant treatment should be applied to an existing floor.

Skirtings and mouldings are often an important element in preserving the original character and should be retained where possible. Victorian skirtings are generally of larger proportions than readily available replacements and might require specialist manufacture. Some tall skirtings might be in hard plaster rather than timber. These can be replaced or repaired by specialist sub-contractors.

6.9.2 Platforms

Platform support walls and structures such as trestles or cross walls, whether they are being rebuilt to meet current standards or repaired, should be in traditional materials, where possible, and in sympathy with the platform buildings.

Where historic surface materials survive and are in good condition meeting current safety requirements they should be retained, with complementary material used for any new work. These materials should generally be used in combination with traditional detailing and compatible modern techniques. Selection of new materials in an historic context should take into account the scale, colour, texture, composition and weathering properties of the proposed materials against the originals they will be adjacent to.

Existing platform copers should be retained if they are of significant architectural or historic value to the station, providing they are compliant with current standards in respect of gauging and construction. It might also be possible to reposition copers of historic value to meet gauging requirements and thus avoid their loss.

The quality and material of the tactile strip should respect the fabric of the adjacent building in terms of colour and texture. Tactile strips are available in engineering brick, stone, concrete, ceramic and as applied finishes. In all cases, however, the tactile strip should fit the design and choice of platform finishes and comply with current safety and access standards.

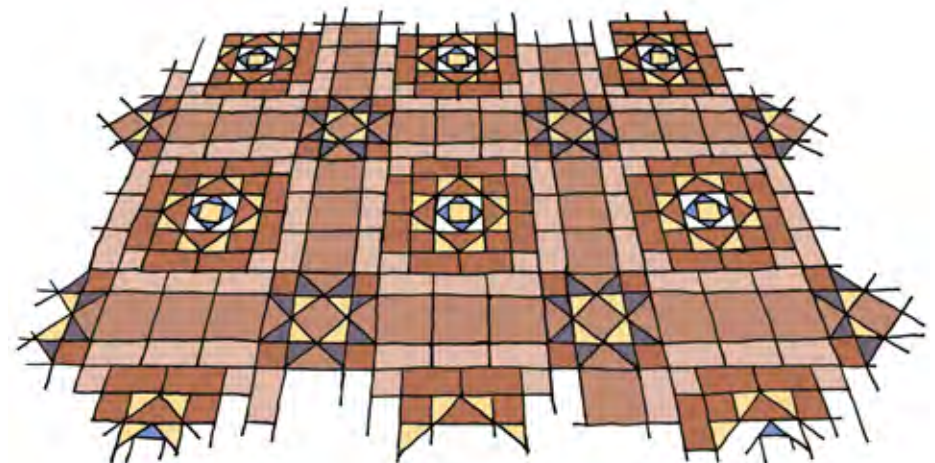


Image 6.11
Encaustic tiles at Lancaster
station, Grade II listed

Design Considerations

6.10 Canopies



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Image 6.12
Platform canopy at Bury St Edmunds
station, Grade II listed.

Platform canopies, whether attached to buildings or free-standing, are usually one of the major characteristics of a station. Whilst station buildings on a particular route might vary according to locally available materials, the canopies on the same route of a former railway company might very well have a common pattern, whether that be the valance design, cast-iron supporting structure or glazing styles.

Most are of simple, elegant, structural design. Frequently the opportunity was taken to embellish the structure, particularly cast-iron work, with company identification. This makes them of great importance when contemplating renovation or alteration works.

Cast-iron foundries do exist and replicas can usually be obtained if necessary. Some foundries have also re-opened and are utilising traditional moulds and patterns. Repair work should be authentic and advice taken to source the appropriate products. Where necessary new moulds can be taken from examples on site or from acknowledged identical or similar patterns.

When re-glazing is required, the traditional methods should be the starting point. Whilst original materials might not be available or acceptable for use, frames should be of the same appearance, cross section and scale to the original. Glass should be used where structural considerations, Health and Safety requirements and security controls permit.

The Glass & Glazing Federation might be consulted over the type and supplier of appropriate materials. Sheets with a similar scale and profile to those originally used. Where polycarbonate alternatives are unavoidable they should be fire-performing and self-cleaning.

When routes are being modernised to meet current electrification standards, it might be necessary to cut back the canopies from the platform edge. This might result in the need to alter the support brackets and reposition the valance and gutter system. This should be done discreetly and as much as possible of the original material should be re-used. Where valances are being replaced, they should be of the same patterns as the originals and normally in the same materials. but The RHT has produced a report on Station Canopy Fascia Daggerboards that examines when FRP might be acceptable instead, because of its reduced maintenance burden.

Services, or fixtures and fittings that are to be found beneath canopies have often been crudely attached to these structures. Frequently the routes to items such as CCTV cameras and passenger information monitors has often been along a cable tray, laid, fully visible, on the bottom truss of canopy brackets. This is to be avoided wherever possible and the opportunity taken, in any refurbishment or renovation, to relocate service runs out of sight.

Design Considerations

6.10 Canopies

Where this is not possible the service routes should be as visually discreet as is practical, located sympathetically to the architecture and not competing with original design features. They should also be painted in a sympathetic colour for the location. Before installation is procured all runs and routes should be discussed and agreed with a conservation expert or architect.

Drainage within canopies, where downpipes are concealed in cast-iron columns, can often be problematic. Blocked drains can freeze and cause fracturing of the cast-iron. Sometimes canopy drainage runs back into concealed downpipes within the masonry of supporting structures. Regular maintenance and cleaning is necessary, as repairs to damaged systems in these circumstances can be difficult. As a last resort, it might be necessary to devise new methods of draining the canopy. Where any new system is visible it should be sympathetic in terms of materials and scale to the original or existing structures. Where the expansion of ice might crack concealed pipework the use of trace heating tape should be considered

Canopies have often been subject to elaborate colour schemes, usually to display 'branding' or company identity. It is preferable to keep ornamental ironwork and canopy brackets painted relatively simple in light colours and allow branding to be applied only to elements that can easily be repainted upon change of occupant. In all cases where branding is implemented, it should be applied in a way that is sympathetic to the design.

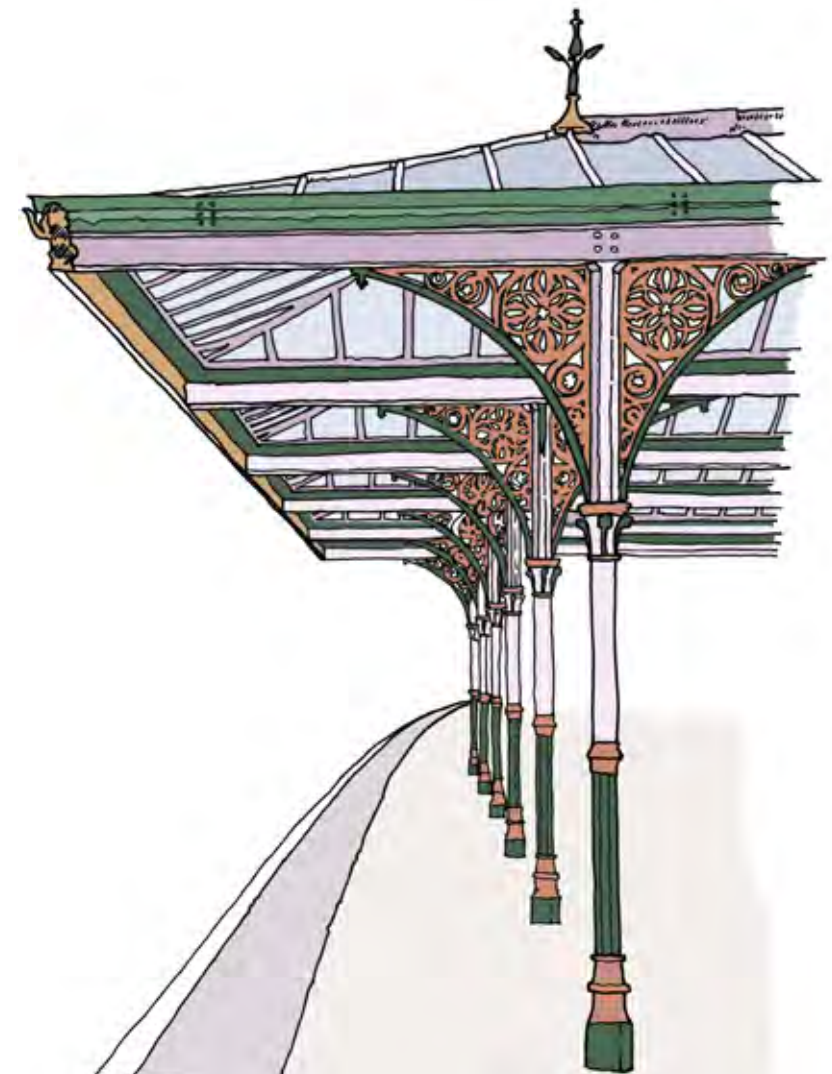


Image 6.13
Grange-over-Sands
station, Grade II listed

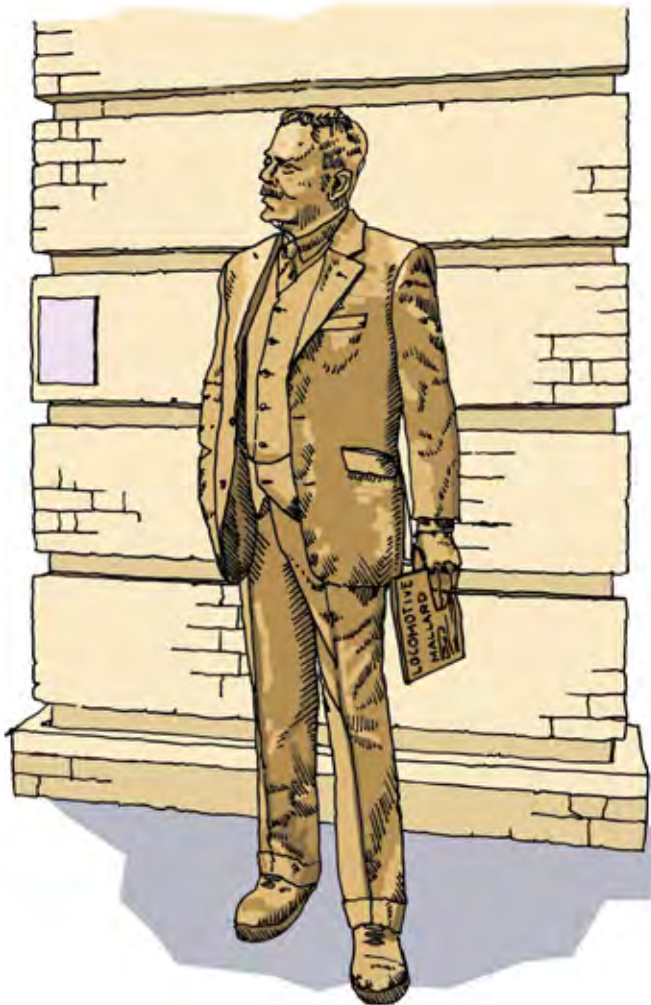


Image 6.14
Sir Nigel Gresley Statue
at King's Cross station

Railway stations are home to a number of valuable statues, sculptures and monuments. Such items should be fully protected in a robust wooden enclosure during building operations. Specialist advice should always be obtained prior to an item being cleaned or before attempting to remove paint or mortar splashes from the surface. If it is necessary to move an item to facilitate building works, specialists should be brought in as they should have the experience and equipment necessary to carry out the task.

Ice and frost can easily damage stone and marble statues. Where the item is temporarily exposed to such weather conditions as part of its restoration, an insulating cover or box should be placed over the statue to prevent such damage.

The RHT maintains a database of railway war memorials, and should be consulted on any proposed changes.

6.12.1 Damp

Dampness is among the prime causes of decay in a building. If it is established that the damp is definitely originating from the ground, a range of methods to create damp-proof courses in walls are now available, with varied benefits. Some methods of chemical injection have a limited design life of about twenty years and should be renewed. By considering the factors associated with the works being carried out, alternative methods might prove to be a better choice over the long term.

There are other simple actions that should help mitigate damp problems. Regular checks should be made to confirm that any outside ground works are kept well below the internal floor levels. Where a damp course is installed, the ground should be kept a minimum of 150 mm below the damp proofing. Surrounding pavements should be laid to slope away from buildings and provision made to get the water away by drainage. In some cases, it might be necessary to install runs of land-drain in the perimeter of a building

Dampness in buildings also helps create conditions for a wide range of fungal decay to thrive. It is vital, if a building is to remain in sound condition, that checks are made of places offering the potential for fungal outbreaks before they become a serious problem. Disused basements and unoccupied buildings on the other side of a party wall should be regularly inspected, their condition recorded and any sign of a fungal outbreak reported, so remedial action can take place. The cause of damp should be identified so that the cause can be addressed

6.12.2 Fire Protection

Where it is necessary to achieve fire protection to structures and other elements using specialist coatings it is advisable to check with a specialist as to the thickness required to meet the necessary fire rating before specifying their use. The thickness might well be excessive and when applied destroy the detail of the surface being coated.



Image 6.1
Refurbishment of pilaster and
brickwork at York station

Heritage
Maintenance & End of Life



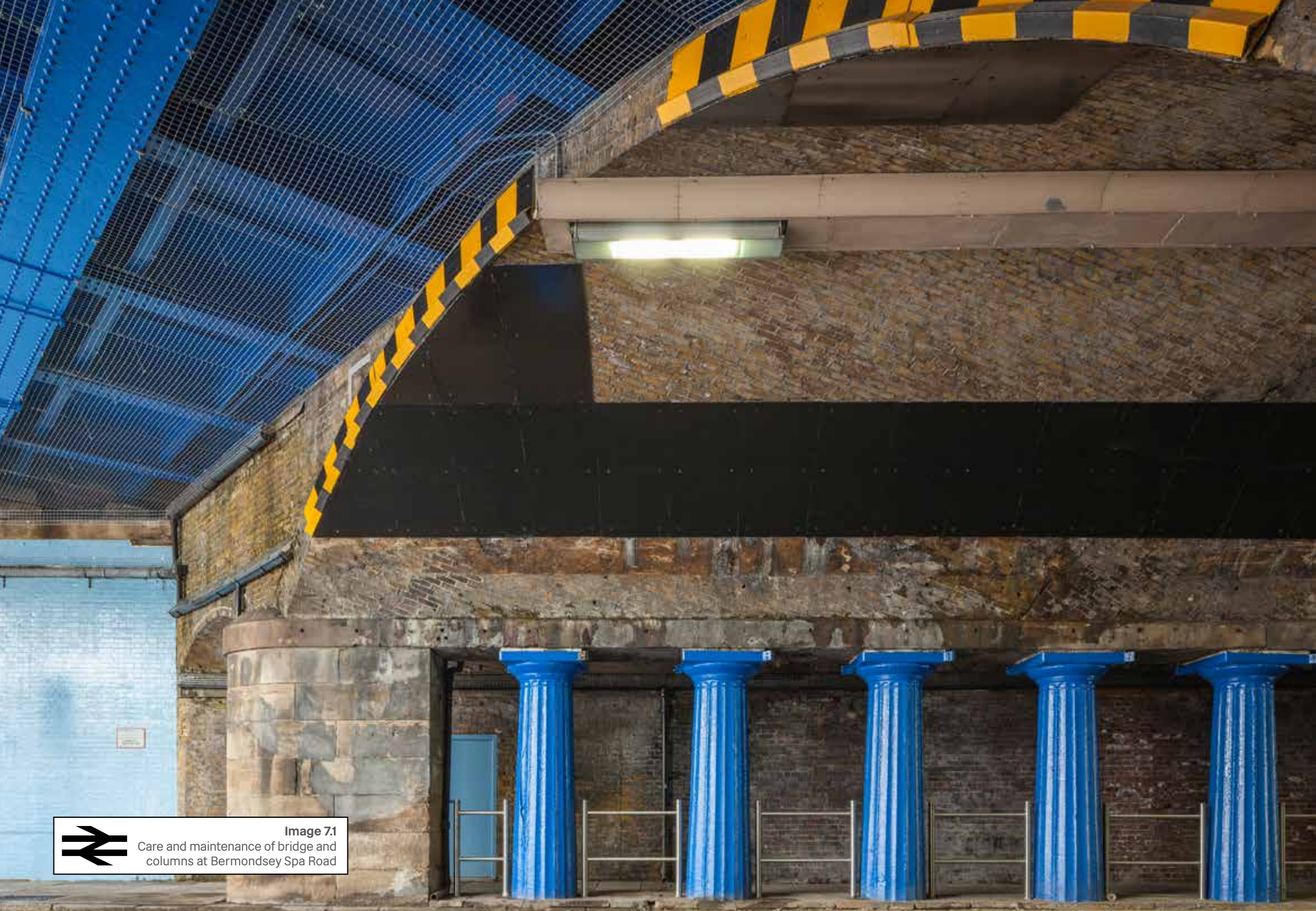


Image 7.1

Care and maintenance of bridge and columns at Bermondsey Spa Road

7.1 Maintenance-related Design Considerations



Good maintenance is a vital feature of any successful building management. It is especially so in respect of historic buildings where the materials used in their construction might have different characteristics to those used today. Knowledge of building history and construction techniques can help in forecasting maintenance tasks, particularly in hidden areas such as cavities and voids where poor ventilation might cause rot problems.

Maintenance or improvement of ventilation levels is nearly always necessary to keep an historic building healthy. Checks should also be made to confirm airways are kept free where insulation is used in roof spaces and especially after works have been carried out. Particular attention should always be paid to the dispersal of water and the maintenance of rainwater goods. Poor or faulty drainage in and around buildings is a major risk that can lead to numerous negative consequences. Damage to interiors, fittings and finishes can also occur, even from relatively small faults. Roofs, parapets, gutters, downpipes and sub-surface drainage should all function without fault and any preventative measures put in place should be effective. Snow and ice can exacerbate the problems caused by poor drainage and ventilation and might cause pipes to split or masonry to spall.

Should water not drain or evaporate from a building adequately, the remaining damp might encourage algae, fungus, mould, moss and lichen growth, particularly on the more porous masonry materials such as stone and brickwork. Moss should not be allowed to take hold on roofs, particularly those shaded from the sun, as this can eventually fall into gutters, blocking them, and might promote self-seeding plant growth such as Buddleia or Ash that in turn could dislodge parapets and coping stones.

Inappropriate repairs, however well intentioned, can also often cause damage. For instance, the use of cement-based mortars to repair brickwork bedded in lime mortar can lead to structural damage through differential permeability or retention of moisture. Of particular concern is the overpainting of surfaces for purposes of branding or refreshing the appearance of tired looking finishes.

Construction or repair should consider the likely level of exposure and confirm that new material should be placed and secured accordingly. Strong winds, for example, can cause problems for dry-fixed tiles and slates. Dislodged roofing or wall tiles and slates should allow the ingress of water. Materials and fixings should be appropriate for the predicted exposure.



Image 7.2
Maintenance on the Forth bridge, taking place near the live railway without disrupting train services

The importance of regular inspection and timely maintenance cannot be over-emphasised. In all properties, a single person should be nominated with the responsibility for carrying out or arranging regular inspections. Such inspections are especially relevant both before and after winter rain, snow and wind. The inspection should be followed closely by the identified remedial measures.

The main requirements for successful maintenance are:

- Planning — ad-hoc reactive maintenance can be costly as well as ineffective.
- Regular Inspections — continual vigilance to identify any damaging activity such as leaking pipes,.
- Informed Forecasting — considering the nature of the building and experience with similar construction.
- Quick Response — to any problem found and emergency repairs
- Access Routes — planned, constructed and readily available to allow safe access to all areas requiring regular and essential maintenance.
- Maintenance Sheets — to confirm the correct cleaning methods and materials are used.
- Training — to confirm staff are aware of conservation aspects of the building and report damage as soon as they are observed.

A further, but often-overlooked aspect of maintenance is to keep up-to-date Maintenance Manuals and 'As-installed' Drawings in a single filing system where they can be kept up-to-date. In much the same way as original drawings and photographs are an invaluable aid to the restoration of an historic building, updated information can save a great deal of time when planning maintenance schedules and coping with emergencies.

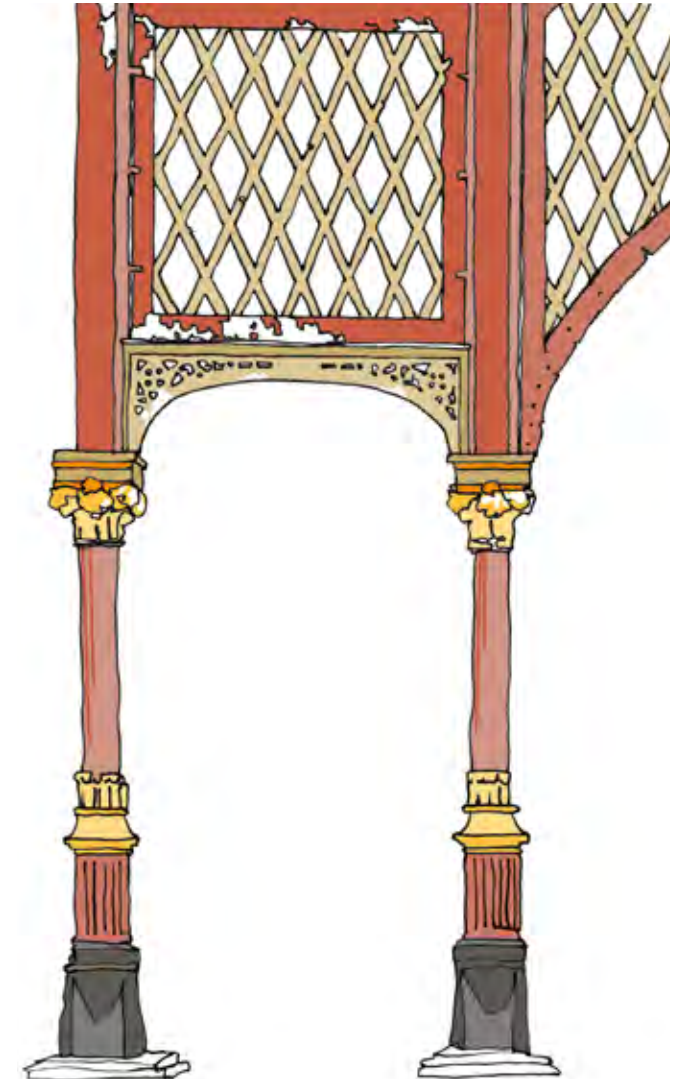


Image 7.3
Footbridge before repair at
Settle station, Grade II listed

Maintenance & End of Life

7.2 Planned Maintenance



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There are two drivers to the current Network Rail maintenance policy:

- the safe management of railway structures
- the long-term care and maintenance of the asset.

With relation to the first aspect all related Network Rail Asset Management standards should apply, and this requires visual examination once a year with a detailed examination of certain classes of structure at intervals between 6 and 12 years, as determined by risk assessment. Structures that cross tracks, including rafts, footbridges and shed roofs require detailed structural assessments.

Image 7.4

Carlisle station, Grade II* listed pictured in 2012 prior to roof refurbishment



Image 7.5

Carlisle station, roof refurbishment in progress in 2016





Image 7.6
Carlisle station,
after refurbishment

7.3 Redundancy and Alternative Use



7.3.1 Disposal or replacement

There are occasions when historic structures are no longer operationally required, or cannot meet operational or safety standards, and a viable alternative use cannot be found. In other instances, historic infrastructure might stand in the way of vital upgrades and enhancements. Very occasionally, a structure might be beyond reasonable economic repair, even with support from the Railway Heritage Trust and others. There are also instances where a building (such as a signal box or goods shed) might no longer be required, where a collection of properties should be rationalised or where structures no longer meet operational or safety standards.

7.3.2 Legislative and policy requirements

If such a structure is listed or in a conservation area, legislation and planning policy expect Network Rail or its tenants to find the appropriate financial resources or a new use, and to demonstrate in detail why this is necessary. Permission for the demolition of listed buildings is only given in exceptional circumstances.

7.3.3 Disposal advice

Should a property be considered for disposal it should be necessary in the first instance to seek advice from Network Rail Property to understand what special conditions or covenants might apply. Network Rail should also advise on any requirement to bring in consultants to assist in the sale.



Refer to Case Study 4:
New Uses for Old Rooms

7.3.4 Protecting vacant buildings

When construction work is delayed on a property that is designated for re-use, the individual buildings should be regularly inspected and maintained in a secure, safe and stable condition. This should help to retain their value and minimise the risk of incurring the cost of unnecessary repairs.

In isolated properties, valuable items such as fireplaces or decorative elements are a target for thieves and should be secured. In extreme circumstances where the risk of damage is high, removal to secure storage for reinstatement later might be considered. This may require Listed Building Consent and this should be clarified with the planning authority and the relevant statutory national heritage body.

Where a building is less isolated, fireplaces and other items should be fully enclosed within timber boxing with inspection panels through which the item can be verified it is still in place.

In all cases an intruder alarm should be considered. The terms and conditions of insurance policies should be checked for exclusions that might jeopardise a claim for the replacement cost of items stolen from an unoccupied building.

Image 7.7

Wroxham Signal box. Members of the Barton House Railway set up the Wroxham Signalbox Trust to preserve and restore the signal box

Image 7.8

Victorian columns at old Blackfriars station were reused by Pontypool and Blaenavon heritage railway



7.4 Demolition and Dismantling

7.4.1 Exceptional circumstances

An application for the demolition of a listed building should be made in exceptional circumstances and only as an option of last resort. The presumption in law and policy is that a listed building should not be demolished unless it can be shown that there is no reasonable alternative. In only a few instances can it be agreed that partial or wholesale demolition of a building or structure is the only solution to a problem. Such events are exceptionally rare and planning policy sets demanding tests before consent can be granted.

In such cases a detailed study is required to justify applications. These studies should include vigorous and exhaustive investigation of alternative uses.

Note that in law and policy, relocation is considered demolition — and the same exacting tests apply.

7.4.2 Recording

In the event of consent being given to demolish all or part of a listed building or structure (or a historic structure in a conservation area), there should normally be a condition to record it with a survey and photographic record carried out by a specialist. In England, the specification for this should be agreed with the local archaeological service and Historic England, and the results should be deposited at the local Historic Environment Record.

For buildings in Scotland the local authority should require the applicant to notify Historic Environment Scotland's Threatened Buildings Survey to provide an opportunity of recording the building prior to its demolition.

In Wales, the Royal Commission on Ancient and Historic Monuments in Wales should be notified for the same reason.

7.4.3 Reclaiming and reusing materials

Opportunities for saving and reusing elements of a building for which demolition is consented might be a condition of the consent. Regardless, they should be explored.

Reclaimed materials and fittings can often be used to replace elements missing elsewhere in the Network Rail estate. In some cases, where there is no option but to remove a building from the site, total relocation within Network Rail's estate or to a heritage railway or to a museum setting may be appropriate.

Where materials are badly damaged, it might not be practicable to reuse or recycle them but this has to be officially agreed.

Document References

Heritage
Definitions
Relevant Legislation and Guidance
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Appendix A

Definitions



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Heritage Definitions

<https://historicengland.org.uk/advice/hpg/hpr-definitions/>

Abbreviated Terms

CIS	Customer Information Screens
CMP	Conservation Management Plan
DDCMS	Department for Digital, Culture, Media and Sport
DfT	Department for Transport
FOC	Freight Operating Company
GDO	General Development Order (applies in England and Wales)
GPDO	General Permitted Development Order (applies in Scotland)
GRIP	Governance of Railway Investment Projects
HER	Historic Environment Record
HPA	Heritage Partnership Agreement
LBC	Listed Building Consent
ORR	Office of Rail and Road
PTE	Passenger Transport Executives
RAM	Route Asset Manager
RHDAB	The Railway Heritage Designation Advisory Board
TfL	Transport for London
TOC	Train Operating Company
TPO	Tree Preservation Order
RHT	Rail Heritage Trust
WSI	Written Scheme of Investigation

Appendix A

Relevant Legislation and Guidance



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Technical and Regulatory Guidance:

Railway Group Standard GI/RT7016 Issue 2

'Interface between Station Platforms, Tracks and Trains'

Rail Industry Standard RIS-7700-INS

'Rail Industry Design Standard for Station Infrastructure'

Railway Group Standard GC/RT5212

'Requirements for Defining and Maintaining Clearances'

DfT — Accessible Train Station Design for Disabled People Code of Practice 2015

DETR — Guidance on the use of Tactile Paving Surfaces (under review 2015)

A Guide to Overhead Electrification, Network Rail / Alan Baxter Associates, 2015

(can be requested from NR Principal Architect)

Examination of the use of FRP for Station Canopy Fascia Daggerboards, Railway Heritage Trust/ Alan Baxter Associates, 2018

Rail Heritage Designation Network Rail

Guide to: The principles of the conservation of historic buildings BS7913:2013

Network Rail Guidance Suite:

Station Design Guidance, NR/GN/CIV/100/02, 2020

Redundant Signal Box Strategy NR/GN/CIV/400/06, 2020

For dated references, only the edition cited applies.

For undated references, the latest edition of the reference (including any amendments) applies.

Appendix A

Relevant Legislation and Guidance

English Legislation, Policy and Guidance:

Planning (Listed Buildings and Conservation Areas) Act 1990

National Heritage Acts 1980, 1983, 1997 and 2002

Planning Act 2008

Enterprise and Regulatory Reform Act 2013

Historic Buildings and Ancient Monuments Act 1953

Planning (Listed Buildings and Conservation Areas) Regulations 1990

Town & Country Planning Act 1990

Town & Country Planning (Development Plans) Regulations 1991

Town Country Planning (Control of Advertisements) (England) Regulations 2007

Transport and Works Applications (Listed Buildings, Conservation Areas and Scheduled Monuments Procedure) Regulations 1992

Town and Country Planning (General Permitted Development) (England) Order 2015

Town & Country Planning (Development Management Procedure) (England) Order 2015

Planning and Compulsory Purchase Act 2004

Ancient Monuments and Archaeological Areas Act 1979

Ancient Monuments (Class Consents) Order 1994

Building Regulations 2010

Health and Safety at Work . Act 1974

Public Health Act 1961

The Regulatory Reform (Fire Safety) Order 2005

Construction (Design and Management) Regulations 2015

VAT Notice 708: buildings and construction

National Planning Policy Framework 2019

Planning Practice Guidance 2019

The National Heritage List for England

Historic Environment Records

Historic England (HE), Protocol for the Care of the Government Historic Estate 2017

HE, Easy Access to Historic Buildings (2015)

HE, Understanding Historic Buildings: A Guide to Good Recording Practice 2016

HE, Infrastructure: Transport Listing Selection Guide 2017

HE, Managing Significance in Decision-Taking in the Historic Environment: Listed Buildings and Curtilage

Appendix A

Relevant Legislation and Guidance

Environment Good Practice Advice in Planning 2 2015

HE, Listed Buildings and Curtilage: Advice Note 10 2018

HE, The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning Note 3 (Second Edition) 2017

HE, Energy Efficiency and Historic Buildings: Draught-proofing windows and doors 2016

HE, Energy Efficiency and Historic Buildings: How to Improve Energy Efficiency 2018

HE, Conservation Principles, Policies and Guidance 2008

HE, Scheduled Monuments: a Guide for Owners and Occupiers 2013

HE, Making Changes to Heritage Assets: Advice Note 2 2016

English Heritage, Investigative Work on Historic Buildings 1994 (available to NBS subscribers)

English Heritage, Scaffolding and Temporary Works for Historic Buildings 1995 (available to NBS subscribers)

The Historic England website including:

Heritage Protection Guides

Heritage Definitions

Building Regulations Compliance: Listed Buildings and Other Heritage Assets

For dated references, only the edition cited applies.

For undated references, the latest edition of the reference (including any amendments) applies.

Appendix A

Relevant Legislation and Guidance

Cadw publications and Welsh Legislation, Policy and Guidance:

The Historic Environment (Wales) Act 2016

Planning (Wales) Act 2015

Planning (Listed Buildings and Conservation Areas) Act 1990

Planning (Listed Buildings and Conservation Areas) Regulations 1990

Planning Act 2008

Town and Country Planning Act 1990

The Town and Country Planning (Development Management Procedure) (Wales) (Amendment) Order 2016

National Heritage Acts 1980, 1983, 1997 and 2002

Ancient Monuments and Archaeological Areas Act 1979

Enterprise and Regulatory Reform Act 2013

Historic Buildings and Ancient Monuments Act 1953

Environmental Protection Act 1990

Ancient Monuments (Class Consents) Order 1994

Building Regulations 2010

Health and Safety at Work . Act 1974

Public Health (Wales) Act 2017

Town Country Planning (Control of Advertisements) Regulations 1992 with amendments

Transport and Works Applications (Listed Buildings, Conservation Areas and Scheduled Monuments Procedure) Regulations 1992

Town and Country Planning (General Permitted Development) Order 1995 with amendments

Town & Country Planning (Development Management Procedure) Order 1995 with amendments

Planning and Compulsory Purchase Act 2004

Planning Policy Wales Edition 10 2018

National Development Framework 2019

Welsh Government Planning Policy Technical Advice Notes including:

Technical Advice Note (TAN) 24: The Historic Environment 2017

Cadw, Heritage Impact Assessment in Wales 2017

Cadw, Managing Change to Listed Buildings in Wales 2017

Cadw, Managing Listed Buildings at Risk in Wales 2017

Cadw, Managing Conservation Areas in Wales 2017

Cadw, Managing Scheduled Monuments in Wales 2018

Cadw, Setting of Historic Assets in Wales 2017

Cof Cymru — National Historic Assets of Wales website

The Cadw Historic Environment of Wales website

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Relevant Legislation and Guidance



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Scottish Legislation, Policy and Guidance:

Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997

Historic Environment Scotland Act 2014

Planning (Scotland) Act 2019

Town and Country Planning (Scotland) Act 1997

Town and Country Planning (Development Planning) (Scotland) Regulations 2008

Town and Country Planning (Control of Advertisements) (Scotland) Regulations 1984

The Town and Country Planning (General Permitted Development) (Scotland) Order 1992 (with amendments 2014)

The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013

Ancient Monuments (Class Consents) (Scotland) Order 1996

Fire (Scotland) Act 2005

National Heritage (Scotland) Act 1985

Natural Heritage (Scotland) Act 1991

Ancient Monuments and Archaeological Areas Act 1979

Building (Scotland) Acts 1959, 1970 and 2003

Enterprise and Regulatory Reform Act 2013

Historic Buildings and Ancient Monuments Act 1953

Building (Scotland) Amendment Regulations 2010

Health and Safety at Work . Act 1974

Public Health . (Scotland) Act 2008

Scottish Planning Policy 2014

Scottish Historic Environment Policy Statement 2016

Scottish Government Planning Advice Notes (PANs) including:

Note 2/2011: Planning and archaeology

Historic Scotland INFORM: Information for Historic Building Owners notes

Historic Environment Scotland (previously Historic Scotland) Managing Change in the Historic Environment guidance notes including:

Guidance on Conservation Areas 2019

Guidance on the Principles of Listed Building Consent 2019

Asset Management 2019

Engineering Structures 2010

Use and Adaptation of Listed Buildings 2019

Setting 2016

Appendix A

Relevant Legislation and Guidance

Works on Scheduled Monuments 2016

Scottish Government Planning Circular 2/2015: Consolidated Circular on Non-Domestic Permitted Development Rights 2015

SG NPPG 5: Archaeology and Planning 1994

Historic Scotland, Conservation of Architectural Ancient Monuments in Scotland 2001

National Records of Scotland Research Guides: Buildings

National Records of Scotland Research Guides: Railway Records

The Historic Environment Scotland website including:

Grants and Funding

Guides for Practitioners & Technical Advice Notes

For dated references, only the edition cited applies.

For undated references, the latest edition of the reference (including any amendments) applies.

Other Published Works:

Conservation, RIBA Plan of Work 2013 Guide, Hugh Feilden

Understanding Historic Conservation, Michael Forsyth 2007

Living Buildings, Architectural Conservation: Philosophy, Principles and Practice by Donald Insall 2018

New design for Old Buildings, Roger Hunt & Iain Boyd SPAB 2017

The SPAB Approach to the Conservation and Care of Buildings, Matthew Slocombe

English Heritage Practical Building Conservation Series 2013

The Heritage Fund Conservation Planning Guidance

Conservation of Georgian Houses by A Davey, R Heath, D Hodges, R Milne, M Palmer, 4th edition, 1995

Informed Conservation - Understanding historic buildings and their landscapes for conservation by Kate Clark 2001

Practical Building Conservation (5 Vols) by J Ashurst and N Ashurst 1988/2011

Emergency Repairs for Historic Buildings by Eleanor Michell 1988

The Repair of Historic Buildings: Advice on Principles and Methods by Christopher Brereton 1991

Conservation of Historic Buildings by Bernard M Feilden 2003

Historical Structural Steelwork Handbook by W Bates 1984 (available for .pdf download from www.steelconstruction.org)

Appendix A

Relevant Legislation and Guidance

National Trust Manual of Housekeeping 2011

Modern Practical Masonry by E G Warland 2006

Looking after antiques by Frances Halahan and Anna Plowden 1999

Tree Roots and Buildings by D F Cutler and I B K Richardson 1989

Heritage under Fire: A Guide to the Protection of Historic Buildings (Fire Protection Association) 1995

Conservation of Building and Decorative Stone by John Ashurst and Frances G Dimes 1998

Mechanical and Electrical Systems for Historic Buildings by Gersil Newmark Kay 1992

Timber Decay in Buildings: Decay, Treatment and Conservation: The Conservation Approach to Treatment by Brian Ridout 2000

Conservation repair and treatment of timbers in historic buildings – Paper 6 of the 1992 British Wood Preservation and Damp-proofing Convention by C J D George and A D Mountford 1992

Conservation of Clay and Chalk Buildings by Gordon T Pearson 1992

Fire protection measures for the Royal Palaces, Report by Sir Alan Bailey 1993

Management Guidelines for World Cultural Heritage Sites by Bernard M Feilden and Jukka Jokilehto 1993

Cleaning Historic Buildings (2 Vols) by Nicola Ashurst 1994

Conservation of Timber Buildings by F W B Charles and Mary Charles 1995

Practical stone masonry by P R Hill and J C E David 1995

Repair of Ancient Buildings by A R Powys (1929) SPAB Third Edition 1995

Building Pathology: Principles and Practice, David Watt 2007

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Relevant Legislation and Guidance

Publications about Railway Buildings:

London Termini by Alan A Jackson 1985

The Railway Heritage of Britain by Gordon Biddle and O S Nock 1983

The Directory of Railway Stations by R J V Butt 1995

The Oxford Companion to British Railway History edited by Jack Simmons and Gordon Biddle 1999

Railways as World Heritage Sites by Anthony Coulls (contributions by Colin Divall and Robert Lee) 1999 (available as a .pdf file to download from www.icomos.org)

Civil Engineering Heritage: various authors for the Institution of Civil Engineers from 1981

Britain's Historic Railway Buildings, Gordon Biddle, 2011

21 Years of the Railway Heritage Trust, Railway Heritage Trust, 2007

Glasgow Central Station Through Time, Michael Meighan, 2013

Station Colours, Peter Smith, 2016

British Rail Architecture 1948-97, David Lawrence, 2018

Britain's 100 Best Railway Stations, Simon Jenkins, 2017

Britain's Historic Railway Buildings — a gazetteer of Structures and Sites', Ian Allan and RHT, 2011

Further Information:

Further information is to be found in publications by the British Standards Institution, the Building Research Establishment, the Lead Development Association and the Stone Federation.

Conservation Guides are also available from Historic England, Historic Environment Scotland, Cadw, The Georgian Group, The Victorian Society and The Society for the Protection of Ancient Buildings. Some Railway Heritage Groups also publish guides to certain building types such as signal boxes, bridges and stations related to particular railway companies or geographical areas.

Many local authority planning departments also produce their own free guides to the management, repair and alteration of listed buildings; the relevant guide should be consulted in each case.

For more detailed research see:

- <http://www.buildingconservation.com/>
- Institute of Building Conservation
- Institute of Conservation (for objects, not buildings)
- The Heritage Alliance

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Processes

Heritage
GRIP Process Diagram
Project Manager's Heritage Checklist



Appendix B

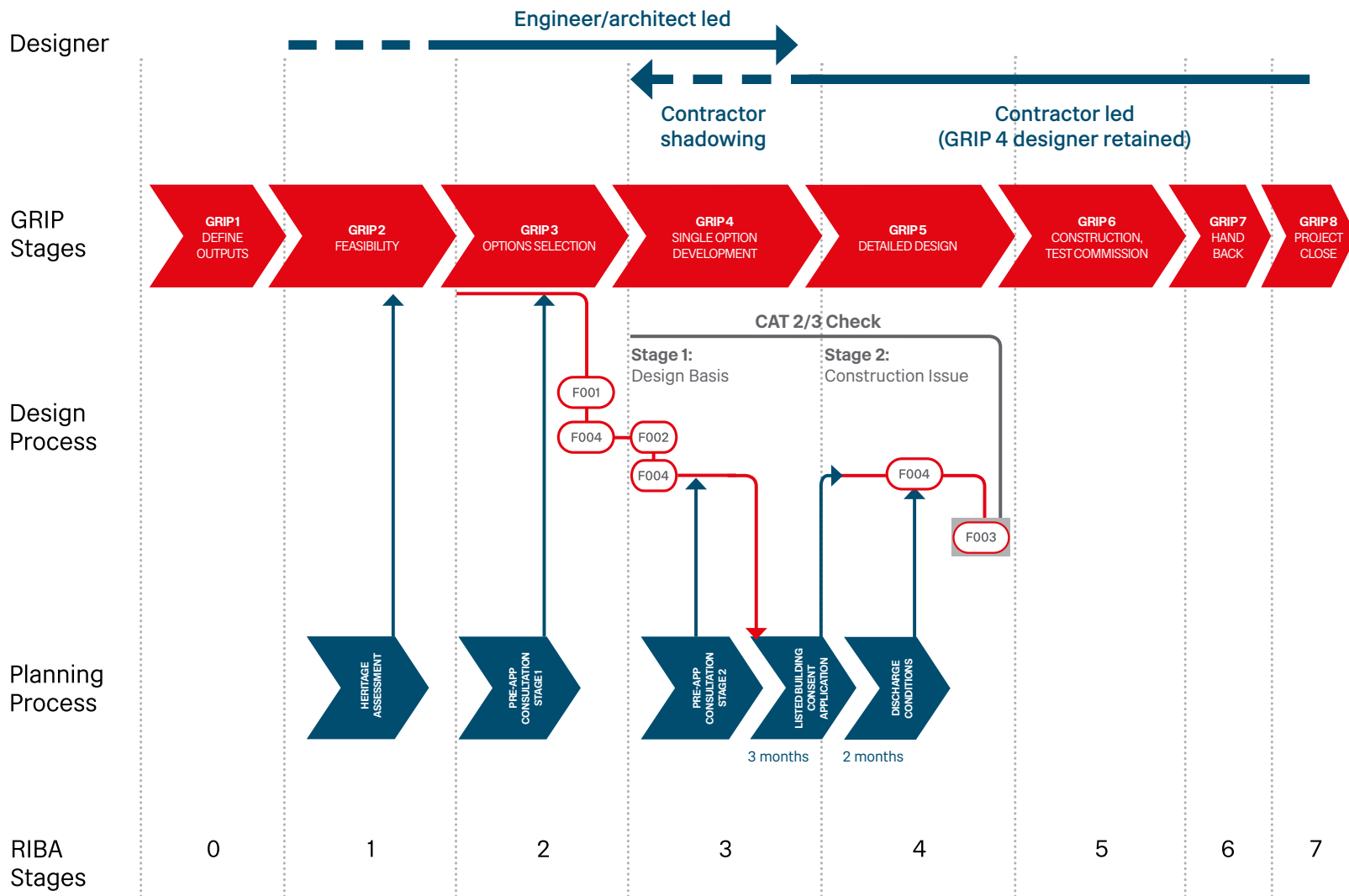
GRIP Process Diagram



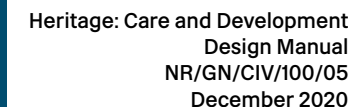
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Project Manager's Heritage Checklist



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	Have you procured all the necessary survey information and decided on key parameters (such as wire heights and track levels)?	
	Have you had Pre-application discussions with the LPA and HE/Cadw/HES? Have they agreed to the selected option?	
	Have you documented your thought process and decisions?	
4. Single Option Development	Does the design contractor CRT clearly and in detail specify necessary heritage / planning outputs (reports, drawings and visualisations, attendance meetings,.)? Are they properly briefed?	
	Does the designer have the right heritage and/or architectural resource?	
	Have you co-ordinated the design interfaces?	
	Have you allowed enough time for the design and consents process, including the discharge of any conditions?	
	Have you got RAM and ToC sign-off for your proposals?	
	Have you consulted key heritage stakeholders, national and local, including the Railway Heritage Trust? Do they support your proposals?	

Appendix B


Project Manager's Heritage Checklist



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GRIP STAGE		
4. Single Option Development	Have you checked that the designs comply with relevant standards, loadings,?	
	Have you budgeted for/sourced any necessary materials, such as stone?	
	Have you documented your thought process and decisions?	
5. Detailed Design	Does the detailed design follow exactly what you have got consent for?	
	Have you discharged all the pre-commencement consent conditions, e.g. providing samples of materials or making a record of the structure?	
	Have you documented your thought process and decisions?	
6. Construction Test and Commission	Does the contractor have the necessary conservation skills in their workforce?	
	Does the contractor understand the requirement to build in exact compliance with the listed building consent?	
	Has the work been carried out to the required standard and in exact compliance with the listed building consent?	
	Have all planning conditions been discharged?	
8. Project Close Out	Are you ready to run another heritage-related project?	

Contacts and Awards

Heritage
**Network Rail Contacts
and Useful Addresses**
National Records Centre
The Railway Heritage Trust
Awards

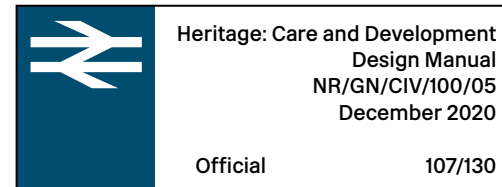




Image C.1
Ramsgate station,
Grade II listed

Appendix C

Network Rail Contacts and Useful Addresses



Network Rail Architectural and Town Planning advice can be obtained from:

Network Rail Technical Authority — Architecture and Design Advice

Department or Role

Principal Architect
Senior Architect

Network Rail — Town Planning Legislation Guidance

Department or Role

Head of Town Planning
Senior Town Planner — Western & Wales
Senior Town Planner — Scotland
Senior Town Planner — Eastern
Senior Town Planner — North West & Central
Senior Town Planner — Southern

Network Rail — Land Information (Property)

Department or Role

Geospatial Data Manager
Geospatial Surveyor

Network Rail — York Audax National Records Centre:

AskTheArchivist@networkrail.co.uk

Useful Addresses:

Historic England

<https://historicengland.org.uk>

Historic Environment Scotland

<https://www.historicenvironment.scot>

Cadw, Welsh Government

<https://cadw.gov.wales>

The Georgian Group

<https://georgiangroup.org.uk>

The Victorian Society

<https://www.victoriansociety.org.uk>

The Twentieth Century Society

<https://c20society.org.uk>

Society for the Protection of Ancient Buildings

Appendix C

National Records Centre



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What is the National Records Centre

Network Rail's National Records Centre is the organisation's central repository for millions of engineering drawings, from the very earliest days of the railway to today's renewal and development schemes. We also hold land and property deeds and agreements that might also be useful in researching historic stations and structures.

How to access it

For research you can request information through the Ask the Archivist service:

- in your initial enquiry please give us as much information about your project as possible
- The catalogues are vast and there might be tens of thousands of records relating to a structure, with varying degrees of cataloguing descriptions, so please also be as specific as you can
- ELR references and structure numbers always help
- The archivist should search the catalogues and let you know what drawings and documents are available. If there are items of interest, you should receive electronic copies for information in the first instance

The Ask the Archivist service can be contacted via:

askthearchivist@networkrail.co.uk and on My Connect:

<https://networkrail.sharepoint.com/sites/myconnect/routeservices/Pages/CorporateArchive.aspx>

For access to current records relating to railway infrastructure please follow the National Record Group's standard processes. Please contact:

NRGenquiries@networkrail.co.uk or via My Connect:

<https://networkrail.sharepoint.com/sites/myconnect/routeservices/Pages/NRG.aspx>

Be aware

Be aware that the historical railway record is widely dispersed, and collections are often split between different repositories. For example, Network Rail might hold the original engineering drawings for a structure while the contract, accounts and business administration forming the context to those drawings might well be held elsewhere. Network Rail might also only have access to microfilm copies of drawings because the originals are held elsewhere or sometimes have not survived.

Other sources of drawings

Additional and related information can be found in repositories such as The National Archives, the National Records of Scotland, local county record offices, the National Railway Museum as well as railway history societies. We should give you pointers as to where other relevant archives might be held.



The Railway Heritage Trust is a company limited by guarantee and owned by its directors. It was formed in 1985, and is sponsored by Network Rail and Highways England's Historical Railways Estate, which is the successor to BRB (Residuary) Ltd. However, the RHT is independent of both bodies.

The RHT's scope of activity is

- nationally listed buildings and structures, or buildings and structures in a conservation area,
- that are owned by Network Rail or Highways England (Historical Railway Estate).

The RHT has two objectives, to give grants to:

1. improve the heritage features of buildings and structures that are in its scope, and to
2. help find new uses for such buildings and structures when they no longer have operational use on the railway.

In addition to awarding grants, the RHT also achieves its objectives by giving advice or comment when required.

The RHT has awarded 1,825 grants, to a total value of almost £60 million, in its 35 years of existence. It has a current turnover of some £2.7 million a year, 90% of which is awarded as grants.

You can find more details of the RHT, how it works, and past projects it has supported, at www.railwayheritagetrust.co.uk or you can contact by email at rht@railwayheritagetrust.co.uk

Appendix C

Awards



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Several awards recognise and publicise good design and care for the architectural heritage. They include annual awards from the Civic Trust, Royal Institute of British Architects, Royal Incorporation of Architects in Scotland, RICS Building Preservation Awards and Europa Nostra. Specific awards that relate to railways include National Railway Heritage Awards, the Brunel Awards and the Best Station Award. Network Rail Architects might be contacted for further advice on submitting suitable projects.



Image C.2

Awards are not only for large scale projects.
This faithful restoration of railings at Newcastle Central station
achieved a National Railway Heritage Award in 2011

Case Studies

Heritage

Great Western Main Line Electrification

King's Cross Station

High Level Bridge

New Uses for Old Rooms





Image D.1
High Level Bridge,
Newcastle upon Tyne

Appendix D — Case Study 1

Great Western Main Line Electrification



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The electrification of the Great Western from London to Cardiff required obtaining dozens of listed building consents for works to stations, overbridges, tunnels and viaducts, many designed by Brunel. Throughout the project, the design team worked hard to challenge Standards and to develop new designs to satisfy operational and safety requirements while meeting the criteria for successful listed building consent applications. The extensive use of specialist heritage advice and early and continued dialogue with local authorities, Historic England and Cadw was vital to containing planning risk.

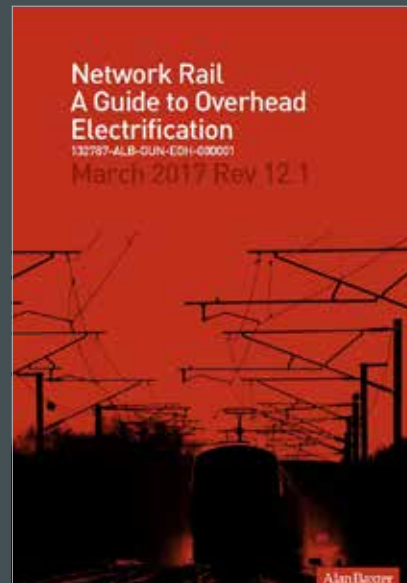
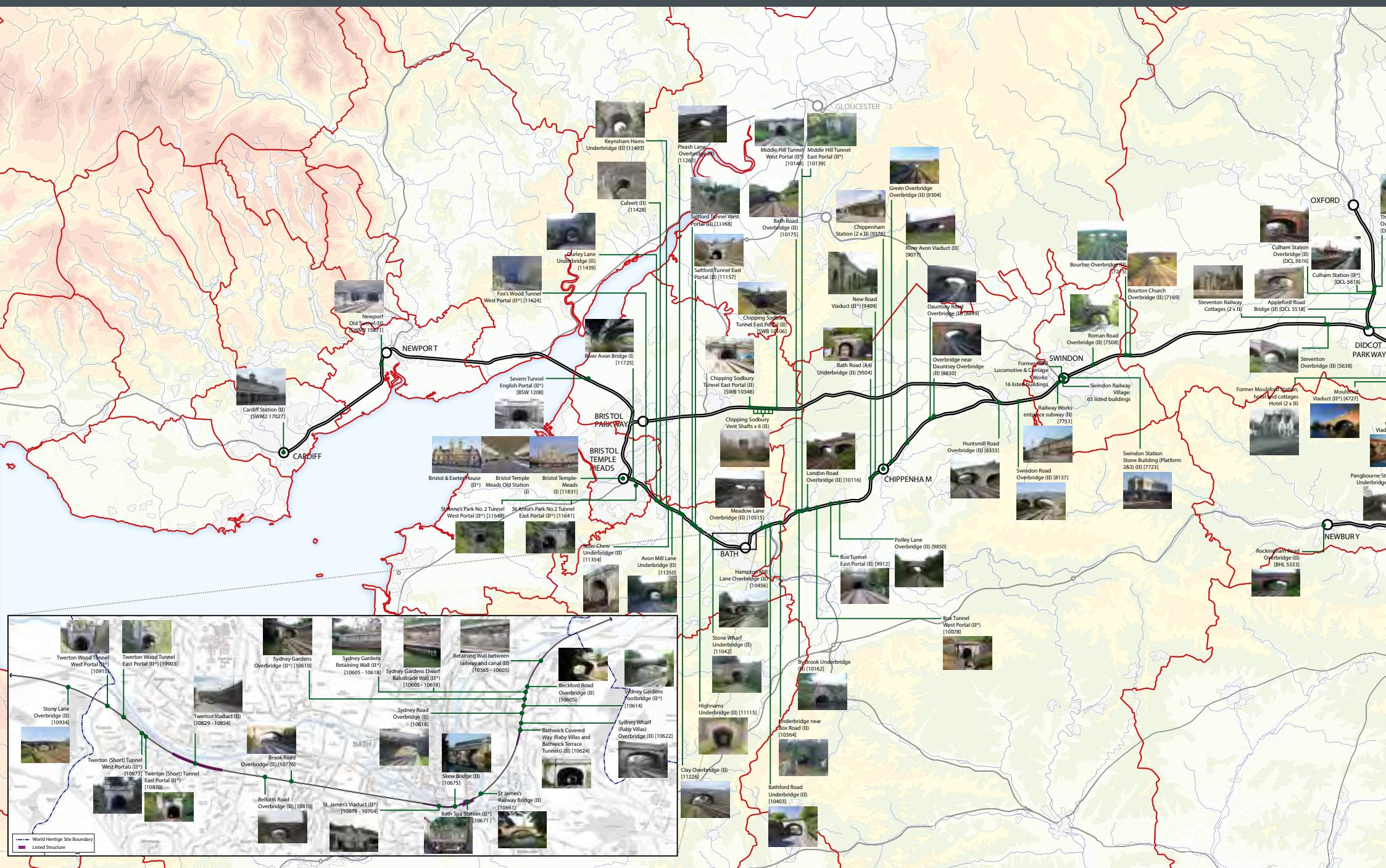
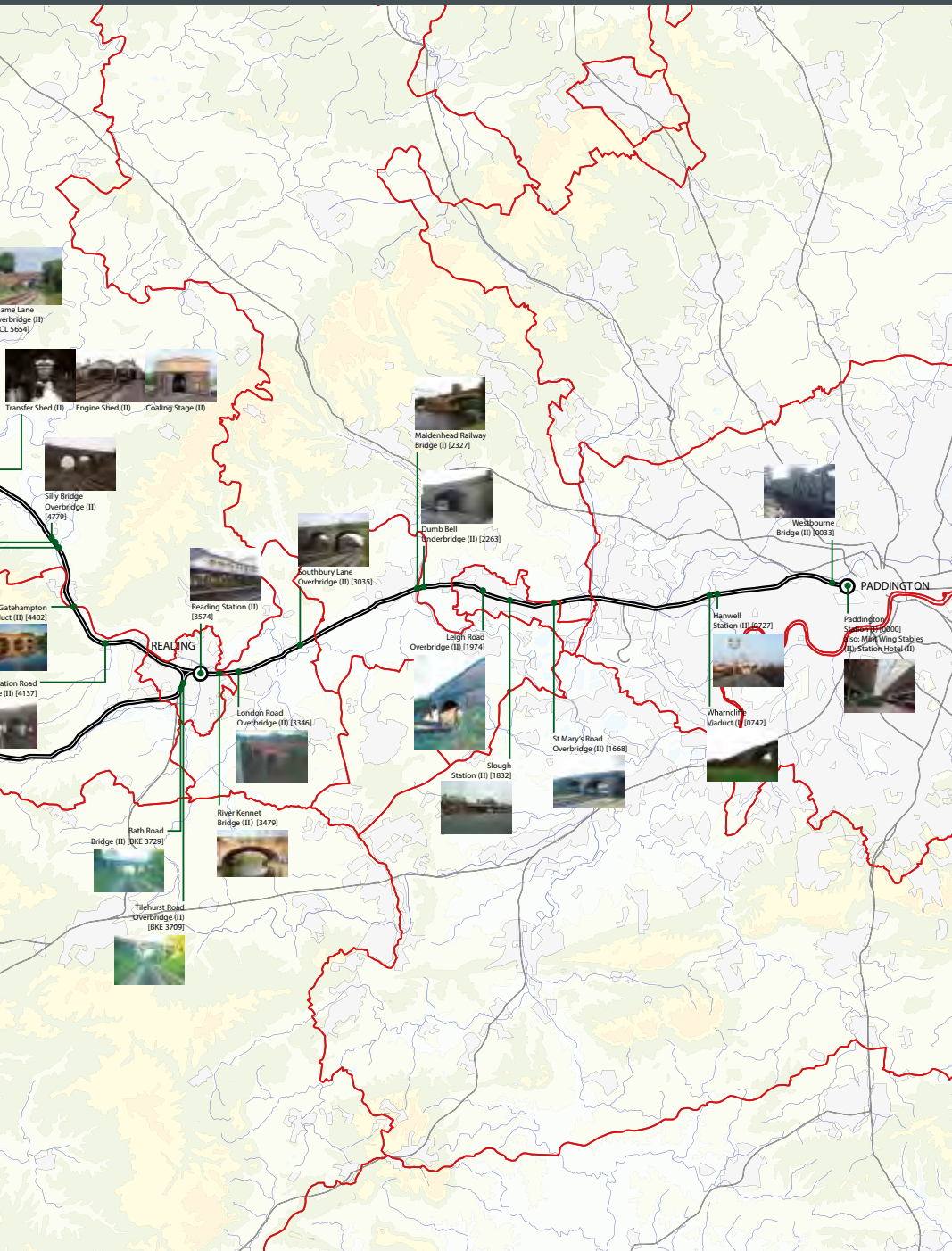


Image D.2
Guide to Overhead Electrification



Image D.3
Statement of History and Significance of the Great Western Main Line





Key

- Listed Structure
- Structure Name
- Listing Grade
- For operational railway structures, the structure number (if MLN), number only, otherwise preceded by ELR

GWML	
GWML Listed Structures	
1515/614	NTS
February 2013	Alan Baxter

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Appendix D — Case Study 1

Great Western Main Line Electrification



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Images D.5

Maidenhead bridge before and after



A special CHS OLE portal was designed to minimise the visual impact of electrification on Brunel's famous Grade I bridge over the Thames at Maidenhead. Variations on the design were used at Gatehampton and other bridges and viaducts. Consent was granted on time because of a willingness to adopt a non-standard design and the employment of a heritage specialist to lead extensive negotiation with the local authorities and English Heritage.

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Overbridges were the most common type of listed structure affected by electrification. By challenging the accepted Standard for overbridge parapets on electrified railways, NR's design team developed a railing with inbuilt mesh which could be modified to suit the many individual overbridges along the route. A number of mock ups were created for the benefit of planning authorities. Problems were initially encountered because contractors did not at first have the resources, experience or expertise to prepare listed building consent applications — requiring a level of detail at an earlier GRIP stage and the production of drawings, reports and visualisations not normally required for bridge works.



Images D.6
GWEP bridge before and after



Appendix D — Case Study 1

Great Western Main Line Electrification



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Images D.7
Cardiff station before and after



The canopies at Grade II listed Cardiff Central Station was carefully cut back and remodelled so that the change is imperceptible. Standard OLE Series 1 masts were used, but care was taken to minimise the number of different types of structure and to position them regularly in order to minimise their visual impact on the station. The process was assisted by the quality of drawings and visualisations provided by the contractor. Cardiff (and other stations such as Stirling) demonstrate that standard NR designs and products might be acceptable at listed stations, if they are employed flexibly and intelligently with specialist advice about the significance of the station and how to respond to it.



Appendix D — Case Study 2

King's Cross Station



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King's Cross Station is one of only 6 grade I listed operational stations in England. Designed by Lewis Cubitt and opened in 1852 as the flagship of the Great Northern Railway, it has a strikingly powerful and lean design that creates a fascinating contrast to the full-blown Gothic of neighbouring St Pancras. By the late 1990s, however, the purity of Cubitt's concept had been lost under 150 years of accretive change, most infamously the temporary concourse built across the front that lasted for 40 years, not 5.

Images D.8 and D.9

King's Cross station with temporary concourse in front (below) and with new public space following 2012 redevelopment (right)



Appendix D — Case Study 2

King's Cross Station



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The acclaimed transformation of the station completed in 2012 to the plans of John McAslan + Partners has won numerous awards. Dramatic improvements to passenger facilities and the capacity of the concourse and the creation of a new public open space has been achieved by restoring and celebrating the 1850s design.

Working with the right architect

Choice of architect — and crucially, their scope — is necessary to achieving quality and a smooth consents process. In this instance John McAslan + Partners had the combination of the necessary understanding of complex stations and their planning and the technical conservation skills to restore the grade I fabric.

Perhaps more importantly, they were retained beyond GRIP 3 to work with the contractor and confirm — at the insistence of English Heritage — that the detail of the consented scheme was carried through into construction.

All too often, the quality of an architectural idea is lost in the process of value engineering under a design and build contract. King's Cross demonstrates what the success that can be achieved by retaining the concept architect.



Image D.10

View of trainshed from Platform 8, prior to refurbishment

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King's Cross Station



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Working with the Railway Heritage Trust

Time and again the RHT is able to bridge a funding gap and realise the finishing touches that make a big impact on the overall presentation and reception of projects but are otherwise outside project scope. At Kings Cross the RHT funded a number of individual projects including a new war memorial and restored station clock. But perhaps its greatest achievement 40% matching funding to replace the 1970s OLE portals with headspans, which effectively makes the OLE disappear, so that the superb restoration of the trainsheds can be enjoyed without interference.

Image D.11

View of trainshed from Platform 8, prior to refurbishment

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King's Cross Station



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Working with 'the grain' of the building

For historic structures, the best results — and the easiest to secure consent for — are achieved by understanding and working with the original design concept.

Here, restoring the historic operating diagram — passenger arrivals on the west side and departures out of the southern end — was key to unlocking the scheme, enabling the existing concourse to be removed, the station façade to be restored and a new square created in front.

Images D.12 and D.13

New concourse at west side of station



Appendix D — Case Study 2

King's Cross Station



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Image D.14
Booking Hall prior to 1970s 'temporary' concourse



Image D.15
Ticket office returned to prior location

Working in partnership with planning stakeholders

A lesson from stakeholders was the close and constant collaboration between the project and the planning authority (the Borough of Camden) and English Heritage was vital to the effective delivery of what was a highly complex planning and consents situation. Regular meetings throughout the project built trust and solved problems, so there were fewer surprises, and less planning risk.

The culmination of this approach was the signing of the network's first Heritage Partnership Agreement after the completion of the project. The station manager reported this agreement saved the requirement to apply for around 40 listed building consent applications in the first year of its operation alone (see section 4.4 for more detail).

Appendix D — Case Study 3

High Level Bridge



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Robert Stephenson's High Level Bridge is one of the most imposing and original creations of the railway age. Imposing, because of its height and span across the Tyne gorge. Original, because it is a double decker, with a road deck suspended beneath the rail deck, between tied iron arches. It is little surprise that the 1840s structure is listed at Grade I.

By the turn of the millennium the structure was 150 years old and in need of significant repair. Following a £42m project with Network Rail, Mott MacDonald and May Gurney, the bridge emerged in 2008 repaired and strengthened for decades of further use.

Central to the success of the multi award-winning project was a commitment to research and development. The bridge was subject to a visual condition inspection and non-destructive testing of 57,000m² of cast and wrought iron. Full-scale fatigue testing of structural components was also undertaken in conjunction with the University of Manchester, to understand the performance of the cast iron.



Image D.16

View of the Tyne river and High Level Bridge

Appendix D — Case Study 3

High Level Bridge



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The importance of properly analysing the nature of a historic structure in order to understand the underlying causes of the defects is all the more important than with more modern structures because of the lack of technical information and the vagaries of Victorian manufacturing and construction techniques. Modern standards and codes should mostly not apply.

In this instance, this approach alleviated the need for extensive strengthening of the rail deck that might otherwise have been required by a more conventional design process - a demonstration that a recognition that historic structures should be evaluated differently can lead to savings in both budget and programme.

Research was not limited to structural performance but combined with restoration of lighting and paint schemes, with the result that the bridge's appearance was greatly improved.

All of this was achieved by close collaboration with the local authorities, England Heritage and the Railway Heritage Trust.



Image D.17
Road deck on the High Level Bridge

Appendix D — Case Study 3

High Level Bridge



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Image D.18
Pedestrian walkway next to the road carriageway



Image D.19
View of the rail deck from the Gateshead side of the High Level Bridge

Appendix D — Case Study 4

New Uses for Old Rooms



Heritage: Care and Development
Strategic Planning
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Image D.20
Disused former first class dining room and Sheffield Midland station

Over the past half century, significant changes to the way that stations are managed, manned and operated have left rooms and buildings across the network underused, neglected or abandoned. This presents both a risk — that condition should deteriorate to a point where expensive repairs to listed buildings are required — and an opportunity — to put redundant spaces to beneficial new uses.



Image D.21
Sheffield Tap, located in the former first class dining room and Sheffield Midland station

Appendix D — Case Study 4

New Uses for Old Rooms



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Image D.22

Gallery space created at Middlesbrough station, external view

For the last twenty years, the Railway Heritage Trust has recognised these issues and in partnership with Network Rail, TOCs, local authorities, charities, businesses and community groups it has funded many dozens of successful schemes to restore and transform abandoned space across the country into a wide range of new uses. As this small sample illustrates, the results create value in many different ways: improving passenger facilities, generating new revenue and providing much-needed facilities for Network Rail's partners and the communities it serves.



Image D.23

Gallery space at Middlesbrough station, internal view

One of the most successful concepts is the 'station tap' pubs created in a series of stations, often exploiting the splendid architecture of former refreshment rooms to create highly successful businesses that also provide improved passenger facilities. The previous page shows the opulent former first class dining rooms at Sheffield Midland Station.

The RHT has frequently supported stations over multiple projects, where the needs are great. An example is Middlesbrough, where in addition to fabric repairs and passenger facilities grant aid has supported the creation of studios and galleries for Platform Arts Ltd. Artists space has been created at a number of stations with RHT investment.

Appendix D — Case Study 4

New Uses for Old Rooms



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Image D.24
Leamington Spa waiting room before refurbishment

Waiting rooms are another frequent beneficiary: either refurbished with improved facilities in historically sympathetic ways, such as Leamington Spa, or brought back into use as here at Inverurie by conversion to a café and coffee bar.



Image D.25
Leamington Spa waiting room after refurbishment

Appendix D — Case Study 4

New Uses for Old Rooms



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Image D.26

Converted rooms the local Historical and Archaeological Society at Littleborough station

Many schemes are architecturally modest, but provide vital support to charities and communities.

Two examples from Lancashire are Bamber Bridge, where parts of the 1840s station building were converted for use by the local Pensioners' Association and, Littleborough, where the redundant interiors were restored to house the collections and meeting space of the local Historical and Archaeological Society.



Image D.27

Rooms converted into a training facility at Harwich Town station

The RHT can help find uses for whole station buildings. Harwich Town Station building and goods shed were both empty and unused until the RHT funded their refurbishment and conversion into offices, training facilities and workshops for the Harwich Mayflower Project.



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