

Bonneagar Iompair Éireann
Transport Infrastructure Ireland

TII Publications



The Conservation of Road Structures

AM-STR-06051

June 2015

About TII

Transport Infrastructure Ireland (TII) is responsible for managing and improving the country's national road and light rail networks.

About TII Publications

TII maintains an online suite of technical publications, which is managed through the TII Publications website. The contents of TII Publications is clearly split into 'Standards' and 'Technical' documentation. All documentation for implementation on TII schemes is collectively referred to as TII Publications (Standards), and all other documentation within the system is collectively referred to as TII Publications (Technical). This system replaces the NRA Design Manual for Roads and Bridges (NRA DMRB) and the NRA Manual of Contract Documents for Road Works (NRA MCDRW).

Document Attributes

Each document within TII Publications has a range of attributes associated with it, which allows for efficient access and retrieval of the document from the website. These attributes are also contained on the inside cover of each current document, for reference. For migration of documents from the NRA and RPA to the new system, each current document was assigned with new outer front and rear covers. Apart from the covers, and inside cover pages, the documents contain the same information as previously within the NRA or RPA systems, including historical references such as those contained within NRA DMRB and NRA MCDRW.

Document Attributes

TII Publication Title	<i>The Conservation of Road Structures</i>
TII Publication Number	<i>AM-STR-06051</i>

Activity	<i>Asset Management & Maintenance (AM)</i>
Stream	<i>Structures (STR)</i>
Document Number	<i>06051</i>

Document Set	<i>Standards</i>
Publication Date	<i>NRA BD 89</i>
Historical Reference	<i>June 2015</i>

NRA DMRB and MCDRW References

For all documents that existed within the NRA DMRB or the NRA MCDRW prior to the launch of TII Publications, the NRA document reference used previously is listed above under 'historical reference'. The TII Publication Number also shown above now supersedes this historical reference. All historical references within this document are deemed to be replaced by the TII Publication Number. For the equivalent TII Publication Number for all other historical references contained within this document, please refer to the TII Publications website.

The Conservation of Road Structures

June 2015

Summary:

This Standard covers procedures, conservation strategies and application of conservation principles in the management of road bridges and related structures which are Protected Structures, structures recorded by the National Inventory of Architectural Heritage (NIAH), Recorded Monuments or National Monuments; such structures having historic and conservation merit of National, Regional or Local importance.

**VOLUME 3 ROAD STRUCTURES:
INSPECTION AND MAINTENANCE**

SECTION 2 MAINTENANCE

PART 2

BD 89/15

**THE CONSERVATION OF ROAD
STRUCTURES**

Contents

Chapter

1. Introduction
2. Conservation Strategies
3. Application of Conservation Principles
4. Management
5. Principle Legislation and Guidance
6. Reference
7. Enquiries

Annex A Further Reading

Annex B Historical Structures Requiring Works –
Decision Flow Chart

1 INTRODUCTION

General

- 1.1 This Standard covers procedures, conservation strategies and application of conservation principles in the management of road bridges and related structures which are:
 - (i) Protected Structures;
 - (ii) Structures recorded by the National Inventory of Architectural Heritage (NIAH), Recorded Monuments or National Monuments; and
 - (iii) Bridges and other structures which are not Protected but are considered as having historic and conservation merit as agreed by the National Roads Authority and the relevant Local Authority.
- 1.2 Road structures that are not Protected Structures or do not sit within the above categories outlined in 1.1 may also merit conservation. These can include the following:
 - (i) Structures of special architectural, historic, archaeological, artistic, cultural, scientific, social or technical interest as determined by the National Roads Authority and the relevant Local Authority; and
 - (ii) Structures within Special Areas of Conservation, National Parks, World Heritage Sites or Architectural Conservation Areas, sites in the National Inventory of Architectural Heritage etc., where the National Roads Authority and the relevant Local Authority deem that conservation measures are required.
- 1.3 The Department of Arts, Heritage and the Gaeltacht's publication, 'Architectural Heritage Protection – Guidelines for Planning Authorities,' should be observed in as far as is practicable. Where possible all works to be undertaken should use traditional materials throughout, taking due regard of the status of the structures, and should be generally carried out in accordance with good building conservation principles as stated in the International Council on Monuments and Sites (ICOMOS) Charter.
- 1.4 Where works are proposed on a bridge or road structure the designer should consult the Local Authority Heritage Officer and/or Conservation Officer at planning stage. Any legislation, bye-laws, restrictions and requirements which may impact on the project shall be recorded in the Technical Acceptance Report submitted to the Structures Section of the NRA in accordance with NRA BD 02.
- 1.5 Where maintenance and remedial works are required for structures covered by this Standard, it is always preferable to conserve and retain the structure's fabric and materials wherever practicable.
- 1.6 Preference should be given to repairs with replacement being only considered as a last resort. The repair shall be sympathetic to what exists and in keeping with good conservation practice e.g. repairing with like materials.
- 1.7 Conservation need not necessarily add to the costs of managing historical structures. With the use of the existing structure and materials it can be more economic than replacement measures and is therefore a more sustainable form of construction.
- 1.8 This Standard provides information on the procedural requirements for the conservation of road structures in Ireland. The Highways Agency in the UK sponsored the publication of 'Conservation of Bridges,' which provides background information, examples and advice on conservation methods and techniques for bridges. This document should be referred to as background reading.

Scope

- 1.9 This Standard provides guidance on the procedures required for conservation of the different types of road structures managed by the National Roads Authority. The Standard applies to;
- (i) Protected Structures;
 - (ii) Structures recorded by the National Inventory of Architectural Heritage (NIAH), Recorded Monuments, or National monuments; and
 - (iii) Bridges and other structures which are not Protected but are considered as having historic and conservation merit as agreed by the National Roads Authority and the relevant Local Authority.

This document covers procedures, conservation strategies, applications for statutory consent, and management.

Definitions

1.10 The following definitions apply in this document;

- (i) *Statutory consent*: refers to the permissions required in order to carry out changes to a protected bridge or road structure.
- (ii) *Road structures*. Bridges and other structure types associated with road alignments. References in this Standard to bridges apply equally to other road structures.
- (iii) *Conservation*. Work on a road structure which retains its aesthetic merit but can incorporate changes that are in keeping with the original structure. Changes can include strengthening, widening and change of use. Conservation can include preservation, restoration and maintenance.

The principles of conservation are outlined in 2.1.

- (iv) *Preservation*. Work to preserve a road structure exactly as it is without improvement or repair.
- (v) *Restoration*. Work to return a damaged road structure back to its original form.
- (vi) *Maintenance*. Work of a routine nature to prevent or control the deterioration of the road structure. Maintenance also includes activities such as inspection and monitoring.
- (vii) *Refurbishment*. Work that goes beyond routine maintenance and can include both conservation and rehabilitation.
- (viii) *Rehabilitation*. Work on a road structure having little intrinsic merit but required to be retained in service. This work can involve significant changes in appearance.
- (ix) *Conservation merit*. A description applied to a motorway, a national road bridge and other structures deemed by the National Roads Authority and relevant Local Authority as requiring the application of conservation strategies for the management and maintenance of the structure, as outlined in Section 3.

To ascertain whether a structure is of conservation merit, advice should be sought from the Conservation Officer or Heritage Officer of the Local Authority concerned or the Architectural Advisory Unit of the Department of Arts, Heritage and the Gaeltacht.

- (x) *Protected Structure.* This is a structure that a Planning Authority considers to be of special interest from an architectural, historical, archaeological, artistic, cultural, scientific, social or technical point of view. These structures are listed in the Record of Protected Structures (RPS) which forms part of each planning authority's Development Plan. The RPS is a dynamic record to which structures are continually added and sometimes deleted.
- (xi) *National Monument.* A monument or the remains of a monument, the preservation of which is a matter of national importance by reason of historical, architectural, traditional, artistic or archaeological interest. National Monuments are generally in State ownership. National Monuments are protected under the provision of the National Monuments Acts 1930-2004 (as amended).
- (xii) *Recorded Monument.* An archaeological monument provided for in the National Monuments Acts 1930-2004 (as amended) and included on the Record of Monuments and Places (RMP). Recorded Monuments are held in private ownership.
- (xiii) *National Inventory of Architectural Heritage (NIAH).* This was established under Article 2 of the 1985 Convention for the Protection of the Architectural Heritage of Europe (Granada Convention). Article 1 of the Granada Convention establishes the parameters of this work by defining 'architectural heritage' under three broad categories of Monument, Groups of Buildings, and Sites.

Monument: all buildings and structures of conspicuous historical, archaeological, artistic, scientific, social or technical interest, including their fixtures and fittings;

Group of buildings: homogeneous groups of urban or rural buildings which are sufficiently coherent to form topographically definable units;

Sites: the combined works of man and nature, being areas which are partially built upon and sufficiently distinctive and homogenous to be topographically definable.

The Categories above are further defined in the NIAH inventory under the following ratings;

International (I): Structures or sites of sufficient architectural heritage importance to be considered in an international context.

National (N): Structures or sites that make a significant contribution to the architectural heritage of Ireland. These are structures and sites that are considered to be of great architectural heritage significance in an Irish context.

Regional (R): Structures or sites that make a significant contribution to the architectural heritage within their region or area. They also stand in comparison with similar structures or sites in other regions or areas within Ireland.

Local (L): These are structures or sites of some vintage that make a contribution to the architectural heritage but may not merit being placed in the Record of Protected Structures. Such structures may have lost much of their original fabric.

Record Only (O): These are structures or sites that are not deemed to have sufficient presence or inherent architectural or other importance at the time of recording to warrant a higher rating. It is acknowledged, however, that they may be considered further at a future time.

- (xiv) *Planning and Development Act 2000 (as amended).* This legislation requires that every structure, or parts of structures which form part of the architectural heritage and are of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest shall be included in a record of Protected Structures included in every planning authority development plan.

Implementation

- 1.11 This Standard shall be used forthwith and shall be used as the basis for the conservation of road structures on national roads, including motorways. The National Roads Authority must be consulted to obtain technical acceptance for the proposed works before any conservation work proceeds.

2 CONSERVATION STRATEGIES

Principles

2.1 The principles of conservation are:

- (i) Bridges are best kept in use and maintained in their original form and performing the same function and structural action.
- (ii) There should be minimal changes to the structure and its appearance.
- (iii) Modifications should involve no loss in character, minimal loss of historic fabric, and minimal adverse effect on the setting.
- (iv) Modifications should preferably be reversible.
- (v) There should be minimal introduction of new material, whether newly produced, modern, or additional to the original fabric.
- (vi) All work should be undertaken using appropriate materials and methods of application.
- (vii) When conservation is carried out, records should be kept of the work and any archaeological artefacts that may be uncovered. There may be a requirement to carry out an archaeological assessment or investigation prior to commencing the work.
- (viii) If deemed appropriate by the National Roads Authority or relevant Local Authority, a long term conservation plan may be drawn up for bridges of conservation merit, defining how they should be managed in the longer term with reference to their significance.

These general principles should be followed as closely as possible. General advice on the conservation of bridges and their landscape is given in the 'Architectural Heritage Protection Guidelines for Planning Authorities' published by the Department of Arts, Heritage and the Gaeltacht.

Furniture

- 2.2 The historic or aesthetic value of existing bridge furniture including parapets, lighting equipment, signs, etc. should be addressed in applications for statutory consent since these can be important features that should be retained whenever possible.
- 2.3 Modern fixtures not in keeping with the age and type of structure should, at an appropriate time, be removed and more appropriate fixtures reinstated. The details of the new fixtures should be carefully considered and included in applications for statutory consent.

Materials

- 2.4 Materials used in the conservation of bridges may require specialist suppliers and contractors having knowledge of their composition, properties and correct method of use. In such cases those employed should have appropriate experience and skills. Reference can be made to the Conservation Accreditation Register for Engineers (CARE) administered by the Institution of Civil Engineers on behalf of Engineers Ireland and the Institution of Structural Engineers. Suitably qualified and experienced Chartered Engineers are eligible to register.
- 2.5 Traditional materials such as masonry (brick, stone), lime mortar, timber, cast iron, wrought iron, can usually be obtained from specialist suppliers. They should be used in a traditional way, for example mortar joints should be pointed in the original style and appearance.

- 2.6 Traditional materials such as lead-based paint that are no longer permitted by health and safety regulations can, if justified by the circumstances, be permitted for use on Protected Structures. The relevant procedures should be confirmed with the National Roads Authority, relevant Local Authority and the Health and Safety Authority.
- 2.7 In some circumstances modern techniques and materials which offer substantial conservation benefits may be appropriate. In these instances they should be discussed and agreed with the National Roads Authority and relevant Local Planning Authority and submitted for statutory consent as required.
- 2.8 In most cases the appropriate techniques for the conservation of Protected Structures will be agreed as part of the application for statutory consent.
- 2.9 On occasion it may be necessary to carry out chemical and/or petrographic analyses as well as the more common mechanical tests on materials in the original structure in order to ensure that replacements are like-for-like. When materials are replaced, their positions in the structure and details of their source should be recorded as part of the archaeological work (see Section 4).
- 2.10 Departures from Standards relating to the specification and use of materials for conservation work shall be approved by the Structures Section of the National Roads Authority.
- 2.11 It should be noted that all masonry arched bridges, whether protected or not, are antiquated structures requiring masonry lime mortar technology in their repair and maintenance.

3 APPLICATION OF CONSERVATION PRINCIPLES

3.1 When considering strengthening, upgrading, widening or change of use to bridges that are protected or have conservation merit, conservation principles should be followed.

Strengthening

3.2 Strengthening may be required when a bridge or component of a bridge is:

- (i) Weakened by general deterioration, most commonly corrosion of iron and steelwork, frost damage to masonry and concrete, rotting of timber and erosion of sub-structures.
- (ii) Damaged by a collision, for example by a high-sided vehicle passing beneath and striking the underside or by a vehicle passing across the bridge and striking the parapet.
- (iii) Required to have a higher load-carrying capacity or a parapet upgrade etc. due to change of use or Standards.

3.3 Assessment of bridges under the scope of this Standard shall be carried out in the normal way in accordance with the scheme requirements, management strategy and operational requirements of the route using current NRA Assessment Standards and taking particular care to ensure that all weaknesses and strengths are identified. To ensure that historic bridges are not strengthened unnecessarily, the full range of available measures shall be considered, including state-of-the-art analysis and more sophisticated structural models, departures from standard, revised loadings and lane layouts and internal strengthening. Refer to NRA BD 303 and NRA BD 304 for information pertaining to the structural assessment of sub-standard Road Structures.

3.4 If the bridge or component is found to be in a dangerous state and requiring immediate attention, it will be necessary to take action without delay. The work shall be short-term and temporary, for example in accordance with NRA BD 79, and planned to be eventually removed. Work of this nature shall be designed to cause least permanent damage to the fabric of the structure.

3.5 Urgent work on Protected bridges can be carried out without statutory consent provided that:

- (i) Works are urgently needed in the interests of health and safety or preservation of the structure;
- (ii) It is not practical to secure health and safety or the preservation of the structure by works of repair or works affording temporary shelter or support;
- (iii) The works carried out are limited to the minimum immediately necessary; and
- (iv) Notice in writing, justifying in detail the carrying out of the works, is given to the local planning authority as soon as reasonably practical.

3.6 Where a bridge has been found to require strengthening as a result of a structural assessment, the choice of the strengthening method will depend on the nature of the problem (see 3.2), construction material, design of the original structure, and requirements of conservation. Strengthening schemes shall be subject to Technical Acceptance by the National Roads Authority as outlined in NRA BD 02.

3.7 When designing a strengthening scheme, historic context, originality of the fabric, uniqueness of the structure, and aesthetics should be taken into account and care taken to avoid changes in external appearance, particularly parapets and edge beams where the aesthetic significance of such items is paramount. If it is necessary to add new structural elements, they should be incorporated into the structure in a sensitive manner.

Although aesthetics are important, the unseen fabric of the bridge also has value and must be given consideration. Early informal consultation with the relevant Conservation and/or Heritage Officer or Local Planning Authority is recommended.

Widening

- 3.8 Where an additional traffic lane or additional space for pedestrians is to be provided, full justification for the proposal will be required, including an assessment of less intrusive options considered, for example, traffic management measures.

The common techniques of widening are:

- (i) Add a cantilevered footbridge onto the original bridge.
 - (ii) Widen the existing bridge, matching the original form as far as practical.
 - (iii) Add a cantilevered deck onto the original bridge
 - (iv) Construct a new footbridge alongside.
 - (v) Construct a new road bridge alongside.
- 3.9 Selection of the method of providing additional capacity should take due account of the setting, environment and historic context of the bridge. Structure widening schemes shall be subject to Technical Approval through the Structures Section of the National Roads Authority.
- 3.10 When designing widening works, aesthetics are particularly important and care must be taken with the final appearance of the side elevation, parapet, and visible deck construction. The appearance and balance of the approaches at road level also require sensitive treatment.
- 3.11 Widening of the original bridge should be in proportion with the span length(s) and care should be taken to ensure that it is not detrimental to the character of the original bridge.
- 3.12 Any new adjacent structure should be designed to leave an uncluttered and clear view of the original structure.

Change of Use

- 3.13 When change of use involves higher loading it will be necessary to undertake a structural assessment to investigate whether the bridge has adequate strength and serviceability, taking into account the particular materials and structural actions of the bridge, and using the appropriate level of analysis, see 3.3.
- 3.14 When the original bridge is to be used to serve a lower volume of traffic, or non-vehicular traffic, or becomes redundant such as when a by-pass is constructed or a new bridge is built nearby, it should continue to receive maintenance because the processes of deterioration will proceed unabated. Some sources of deterioration may change, such as reduced salt spray, or increased vegetative growth, and this should be taken into account in the maintenance planning. Where ownership is transferred the prospective owner shall be advised of the heritage status of the structure, and the need to continue any conservation strategy that may be in place.
- 3.15 It will be necessary to ensure that a redundant bridge continues to be maintained in a safe condition, posing no risk to passers-by. This can be aided by designing alternative uses for the redundant bridge, for example, to carry a bridleway or cycle track, or serve as part of a lay-by.
- 3.16 When utilities are present in a redundant structure it will usually be necessary to ensure that they continue to be adequately housed and supported and do not become a threat to the bridge.

4 MANAGEMENT

- 4.1 When undertaking work on a Protected Structure, archaeological recording before and during the work will normally be required. Results should be entered into the Schedule of Operation and Maintenance issued for the structure as detailed in NRA BD 02, and entered into any relevant database including the Archaeological Survey of Ireland's Sites and Monuments Records (SMR).
- 4.2 Management planning is required in accordance with normal practice, taking due account of the principles of conservation.
- 4.3 For many historic bridges, it cannot be assumed that drawings or even recent surveys are necessarily correct. Important details, such as earlier strengthening measures or the presence of redundant structural elements, may be hidden within the structure and not recorded.
- 4.4 When planning maintenance measures, requirements of conservation should normally take precedence over maintenance strategies based on whole life costs.
- 4.5 Before carrying out maintenance work on a structure, it should be determined whether there are any protected species of flora or fauna, or sites designated for the protection of habitats or species in or near to the structure. The Local Authority Heritage Officer and/or Conservation Officer, owner or authority responsible for the obstacle being crossed may be able to provide this information. Databases on Natura 2000 and other designated sites, protected species and biodiversity, including those maintained by the National Parks and Wildlife Service (NPWS) and Biodiversity Ireland, should be consulted. For structures crossing watercourses the relevant authorities (the Office of Public Works and Inland Fisheries Ireland) shall be consulted. Where protected species exist, work may be subject to license by the National Parks and Wildlife Service. Works on structures in or close to designated Natura 2000 sites must be subject to screening to determine if an appropriate assessment, as required by the Habitats Directive, is necessary. Refer to NRA guidance documents "Guidelines for Assessment of Ecological Impacts of National Roads Schemes".
- 4.6 When carrying out demolition work on lesser structures and buildings it is prudent to store redundant materials that may be suitable for future maintenance of historic bridges, for example masonry, ironwork, timber etc.
- 4.7 Maintenance of historic bridges should ensure their safety and serviceability and be undertaken in accordance with the principles of conservation.
- 4.8 Anticipation and undertaking of maintenance works to prevent later problems can be particularly effective for historic bridges. This includes deck waterproofing, water management and river training. Routine maintenance activities (see NRA BD 302 NRA Irish Structure Management System (EIRSPAN) – Routine Inspection & Maintenance Manual) for such structures should be reviewed to ensure that the most appropriate regime for the structure is in place.
- 4.9 Maintenance work is normally exempted development under Section 4(1)(h) of the Planning and Development Act 2000 (as amended). However, under Section 179 (6)(a) of the Act, works which would normally be exempted, are not exempted when the structure is a Protected Structure or proposed Protected Structure and the works would materially alter it. Refer to section 5.2 below.
- 4.10 When carrying out routine or other minor preventative maintenance on Protected bridges, it may be necessary to consult the relevant Local Authority's Conservation and/or Heritage Officer as any work involving materials or appearance, for example maintenance painting of ironwork and re-pointing of masonry joints, will normally require their approval.
- 4.11 A stringent no-tree zone should be established and maintained around the structure to avoid consequential damage. Where existing vegetation provides an established sight or noise screen, or where existing trees are the subject of preservation orders, due account shall be taken of this.

5 PRINCIPAL LEGISLATION AND GUIDANCE

5.1 The principal legislation and guidance relevant to conservation of Protected Structures is set out below.

Planning and Development Regulations SI 600 of 2001 (Part 8)

5.2 For developments of a class listed in Section 80 of the Planning and Development Regulations 2001 and which is carried out by a Local Authority, the procedures specified in Sections 81 to 84 must be followed. Such developments are referred to as 'Part 8' developments. Part 8 applies where a Local Authority proposes to carry out work to a bridge that is a Protected Structure or proposed Protected Structure in its ownership and within its own functional area.

5.3 Public consultation is an intrinsic part of the 'Part 8' process. In addition to indicating on the site notice and the development proposal document that the development is to a Protected Structure or proposed Protected Structure, the Local Authority should ensure that information on the impact of the proposed development on the structure is included in the information available to the public and prescribed bodies, as outlined in Article 82 (2), of the Planning and Development Regulations 2001.

5.4 The County Development Plan should be consulted as a Planning Authority cannot carry out works that would materially contravene its development plan, including objectives to protect the architecture, in accordance with Section 178, of the Planning and Development Act 2000.

Maintenance

5.5 In accordance with Section 179 (6) (a), of the Planning and Development Act 2000, works of maintenance and repair are not subject to Part 8 procedures, providing they would not materially affect the character of a Protected Structure.

5.6 Planning Authorities should ensure that where maintenance and repair works are being carried out to a Protected Structure or Proposed Protected Structure, they are done in a sensitive and appropriate way. Further information on this can be found in the Department of Arts, Heritage and the Gaeltacht's document, 'Architectural Heritage Protection – Guidelines for Planning Authorities.'

5.7 Routine maintenance activities (see NRA BD 302: NRA Irish Structure Management System (EIRSPAN) – Routine Inspection & Maintenance Manual) for structures coming under the scope of this standard, should be reviewed to ensure that the most appropriate regime for those structures is in place.

Principal Legislation and Guidance

5.8 Principal Acts and guidance documents relevant to conservation of protected bridges in Ireland are given below.

- (i) Planning and Development Act 2000 (as amended): This act is the basic starting point for the modern planning code. It consolidates all planning legislation from 1963 to 1999. Among other things, it provides the statutory basis for protecting our architectural heritage. Under Part IV of the Act, the Minister for the Environment, Heritage and Local Government can recommend sites and structures for inclusion in the Record of Protected Structures.
- (ii) Planning and Development Regulations 2001(as amended): The Planning and Development Regulations, 2001, implement the Planning and Development Act, 2000 in its entirety. Part 8 of the Planning and Development Regulations details the requirements in respect of specified developments by, on behalf of, or in partnership with Local Authorities.
- (iii) The National Monuments Act (1930-2004) (as amended): This legislation governs the protection of archaeological heritage in Ireland.

The act provides for the protection of national monuments through the use of preservation orders. Under the National Monuments Act, monuments are protected in the following ways:

National Monuments which are subject to a preservation order. If it appears that a monument, considered to be a national monument, is in danger, or falling into decay, or is actually being destroyed the Minister for the Arts, Heritage and the Gaeltacht may, by preservation order or temporary preservation order, undertake the preservation of the monument.

Historic Monuments or archaeological areas recorded in the Register of Historic Monuments. This contains a list of all historic monuments known to the Minister. Owners or occupiers must not, other than with statutory consent, alter, deface, demolish or in any manner interfere with a historic monument entered in the register (National Monuments (Amendment) Act, 1987).

For National Monuments in the ownership or guardianship of the Minister or a Local Authority or which are subject to a preservation order, the prior written statutory consent of the Minister is required for any works at or in proximity to the monument.

Application to the Minister for Arts, Heritage and the Gaeltacht for statutory consent under Section 14 of the National Monuments Act 1930 - 2004 (as amended) is required for proposed works to a National Monument. There are Standard Application Forms available from the Department of Arts, Heritage and the Gaeltacht for this purpose.

- (iv) Monuments recorded in the Record of Monuments and Places (RMP): All known monuments and sites are identified and listed for protection in the Record of Monuments and Places. Monuments entered into it are referred to as Recorded Monuments. Owners or occupiers of Recorded Monuments are required to give two months' notice to the Minister and obtain statutory consent before carrying out any works in relation to the monument. This is to allow the National Monuments Service time to consider the proposed works and how best to proceed to further the protection of the monument. The RMP consists of a set of 6" maps of the different Counties with an accompanying index which shows all the sites, monuments and zones of archaeological potential, recorded to date and protected in the county. The inventory concentrates on pre 1700 AD sites.
- (v) The Architectural Heritage (National Inventory) and Historic Monuments (Misc. Provisions) Act 1999 (as amended): This act established the National Inventory of Architectural Heritage to fulfil Ireland's obligations under Article 2 of the 1985 Convention for the Protection of the Architectural Heritage of Europe (Granada Convention). The purpose of the National Inventory of Architectural Heritage is to identify, record, and evaluate the post-1700 architectural heritage of Ireland to aid in the protection and conservation of the built heritage.
- (vi) The Heritage Act 1995 (as amended): This is the primary piece of legislation in Ireland governing heritage. The act established the Heritage Council whose functions include proposing policies and priorities for the identification, protection, preservation and enhancement of the national heritage.

This includes monuments, archaeological objects, heritage objects, architectural heritage, flora, fauna, wildlife habitats, landscapes, seascapes, wrecks, geology, heritage gardens and parks and inland waterways.
- (vii) The Habitats Directive – Council Directive on the conservation of the natural habitats of wild fauna and flora (92/43/EEC) as transported into Irish law under the E.C (Natural Habitats) Regulations 1997 (S.I No. 94 of 1997). Ref: National Parks and Wildlife Service.
- (viii) The Freshwater Fish Directive – Council Directive on the quality of fresh waters needing protection or improvement in order to support fish life (78/659/EC) as transposed into Irish law under EC (Quality of Salmonoid Waters) Regulations 1988 (SI No. 293 of 1988). Ref: Inland Fisheries Act 2010 & Bye Laws & Inland Fisheries Ireland.

- (ix) The Local Government (Water Pollution) Act 1977 (as amended).

6 REFERENCES

1. Tilly, G P. – Conservation of Bridges. Spon: 2002
2. Planning and Development Act, 2000 (as amended).
3. Architectural Heritage Protection – Guidelines for Planning Authorities. Department of Arts, Heritage and the Gaeltacht (Chapters 7.1, 14.2 & Appendix B)
4. The Planning and Development Regulations, 2001 (as amended).
5. National Monuments Act 1930-2004 (as amended).
6. Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act, 1999, the Irish Statute Book.
7. The Heritage Act 1995 (as amended).
8. Civil Engineering Heritage. Series of six volumes. Thomas Telford: 1993 – 2001
9. National Roads Authority Design Manual for Roads and Bridges (NRA DMRB)
NRA BD 02. Technical Acceptance of Structures on Motorways and Other National Roads
NRA BD 79. The Management of Sub-standard Road Bridges
NRA Eirspan Bridge Management System
NRA BD 303 The Stage 1 Structural Assessment of Sub-Standard Road Structures
NRA BD 304 The Stage 2 Structural Assessment of Sub-Standard Road Structures

7 ENQUIRIES

- 7.1 All technical enquiries or comments on this document or any of the documents listed as forming part of the NRA DMRB should be sent by e-mail to infoDMRB@nra.ie, addressed to the following:

Head of Network Management, Engineering Standards & Research
National Roads Authority
St Martin's House
Waterloo Road
Dublin 4



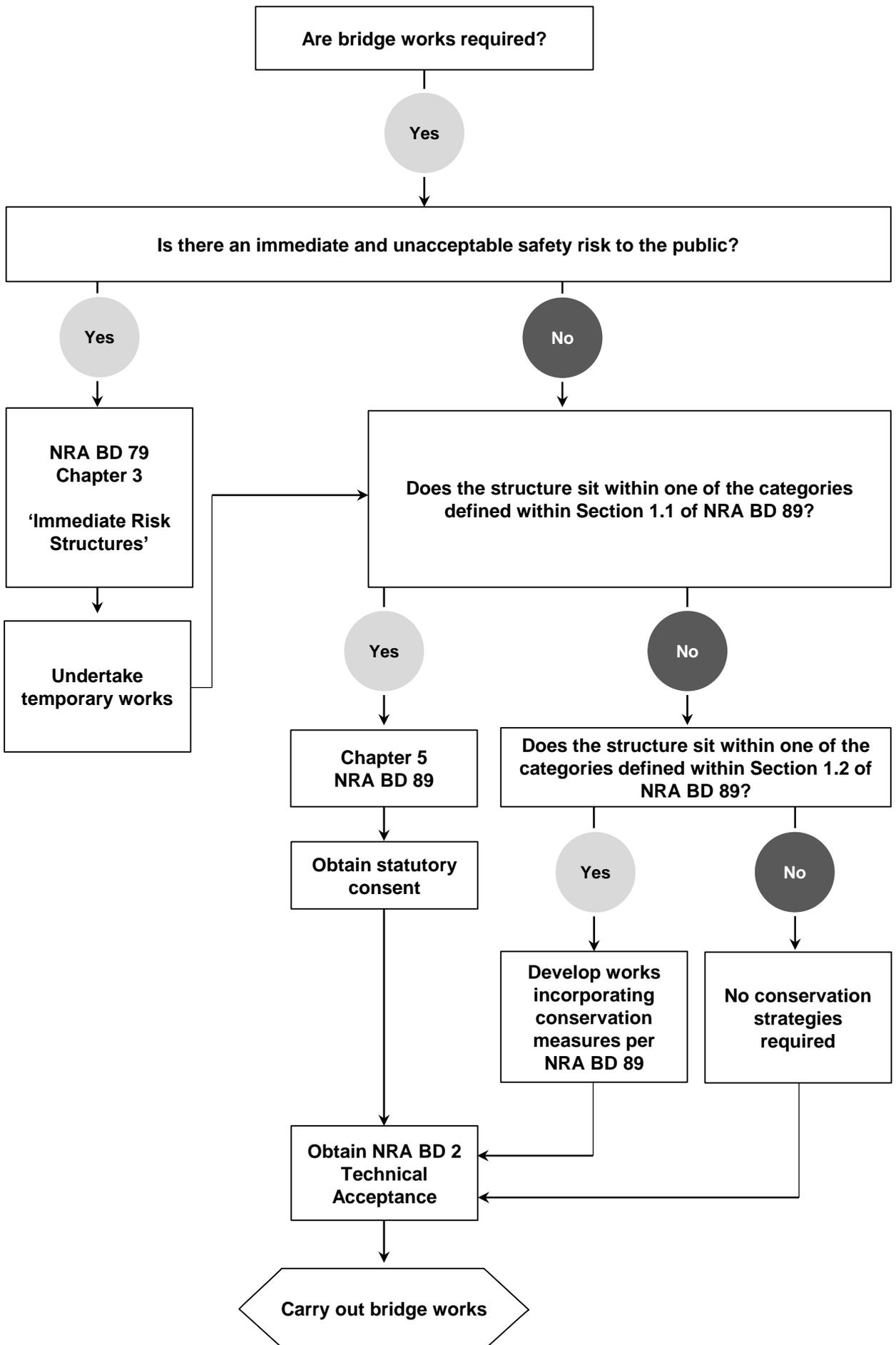
.....
Pat Maher
Head of Network Management,
Engineering Standards & Research

ANNEX A FURTHER READING

Additional Information

1. Sowden Maurice A - The Maintenance of Brick and Stone Masonry Structures. Published by E & FN Spon.
2. McAfee Pat – Irish Stone Walls. Published by O’ Brien Press
3. McAfee Pat – Lime Works, using Lime in Traditional and New Buildings. Commissioned by the Building Limes Forum Ireland.
4. Masonry arch bridges: condition appraisal and remedial treatment, CIRIA 2006
5. A Guide to Repair and Strengthening of Masonry Arch Bridges, TRL 1996
6. Architectural Heritage Protection – Guidelines for Planning Authorities. Department of Arts, Heritage and the Gaeltacht.

ANNEX B Historical Structures Requiring Works – Decision Flow Chart



Historical Structures Requiring Works – Decision Flow Chart



Bonneagar Iompair Éireann
Transport Infrastructure Ireland



Ionad Ghnó Gheata na
Páirce,

Stráid Gheata na Páirce,
Baile Átha Cliath 8, Éire



Parkgate Business Centre,
Parkgate Street,
Dublin 8, Ireland



www.tii.ie



info@tii.ie



+353 (01) 646 3600



+353 (01) 646 3601