

TII Publications | Restructuring Standards and Technical Documentation

TII National Roads Conference 2015, The Malton Hotel, Killarney
Thursday 24 September 2015

Gavin O'Donnell, Arup



ARUP

Speaker

Gavin O'Donnell

*Project Manager for TII
Standards Commission*

Associate Director at Arup



Agenda

- Introduction
- A brief history of Road Standards in Ireland
- Background to TII Publications
- Outline of TII Publications
- What's new and what stays the same?
- Future developments
- Closing remarks

Introduction

Introduction



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NRA Standards

NRA Design and Contract Document Manuals

Welcome to the National Roads Authority Standards website.

Follow the links on the left hand side to access the various parts of the website.

The NRA Design and Contract Document Manuals contain information relating to the design, construction and maintenance of national roads schemes in Ireland and can also be accessed below:

[The NRA Design Manual for Roads and Bridges \(NRA DMRB\)](#)

[The NRA Manual of Contract Documents for Roadworks \(NRA MCDRW\)](#)

[NRA Interim Advice Notes](#)

Introduction

Volume 1
Specifications

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[NRA Interim Advice Notes](#)

Introduction



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Welcome to TII Publications

TII's online suite of standards and Technical publications related to national road and light rail networks in Ireland

Please enter document reference or title

SEARCH

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Outline of TII Publications

TII maintains this online suite of technical publications, referred to as TII Publications. 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). All documentation is available for free download. More information on the [TII Publications system](#).

> [View Recent Changes](#)

Lists of new and updated TII Publications documentation published recently

> [Forward Look](#)

The current list of anticipated publications and an estimated publication date

> [Departure to Standards](#)

Dedicated website for application or management of Departures to TII Publications

> [TII Document Library](#)

Library of non-technical TII documentation on the main TII website

A brief history of Road Standards in Ireland

A brief history of Road Standards in Ireland

Pre-2000 | An Foras Forbartha and later NRA

- Geometric Design Guidelines
 - RT 144 Horizontal and Vertical Curves
 - RT 165 Motorway Interchanges
 - RT 180 Classification, alignment and cross-section of roads
 - RT 181 Intersections at Grade
 - RT 182 Aesthetic Road Design Guidelines
 - RT 186 Truck Climbing Lanes on Roadways
 - RT 244 Compound Horizontal Road Curves

"Report on Standards for the Classification and Lay-Out of Roads"
(Department of Local Government, 1946)

A brief history of Road Standards in Ireland

2000 | National Roads Authority

- NRA Design Manual for Roads and Bridges
 - Promotion of quality and consistency across the network
 - Addressed more complex design aspects
 - Drew heavily on equivalent UK DMRB standards
- NRA Manual of Contract Documents for Roadworks
 - Promotion of best practice workmanship and material specification
 - Addressed IEI Conditions of Contract (subsequently revised to GCCC Public Works Contracts)
 - Drew heavily on equivalent UK MCHW documentation

A brief history of Road Standards in Ireland

2000 to 2015 | National Roads Authority

- Standards Developments
 - Introduction of more stand-alone NRA Standards
 - Reduction of NRA Addenda to UK DMRB Standards
 - Reduction of UK DMRB '*Background Reading*' documents
 - More extensive reference to international standards
 - More experience of lessons learned through projects

2015 | Transport Infrastructure Ireland

- TII Publications
 - A new structure for all TII Standards and Technical documentation

Background to TII Publications

Background to TII Publications

- TII wanted a new structure to;
 - promote the new TII brand
 - have fully stand-alone TII documentation
 - better integrate Standards with workflows
 - consideration of wider NRA and RPA technical documentation
 - maintain a coherent and logical structure
- Other Country's systems reviewed initially;
 - Sweden, The Netherlands, Denmark, Australia, Canada, USA and the UK
 - Wide variability in approach

Background to TII Publications

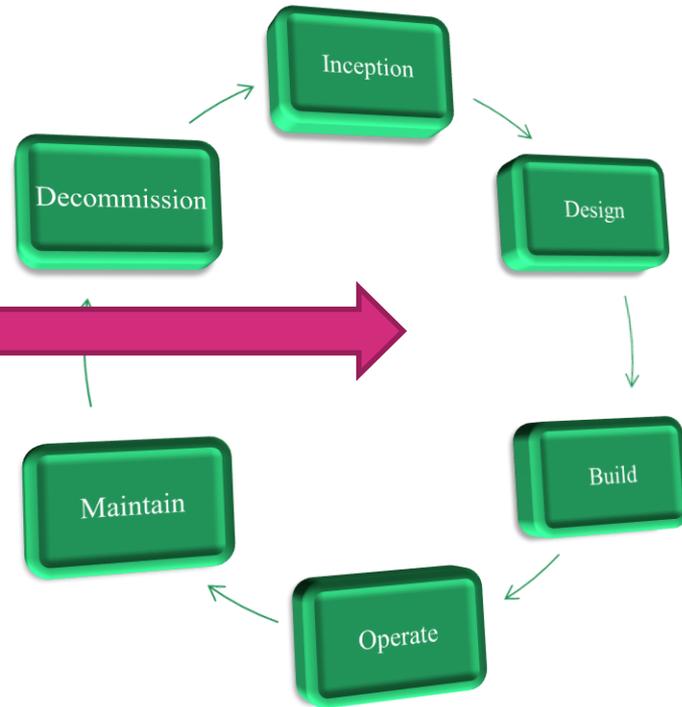
- Objectives of the new system
 - Simple, over-arching structure
 - Modular-based
 - Flexible sub-structure;
 - Increased web-based functionality; and
 - Electronic document management system

Background to TII Publications

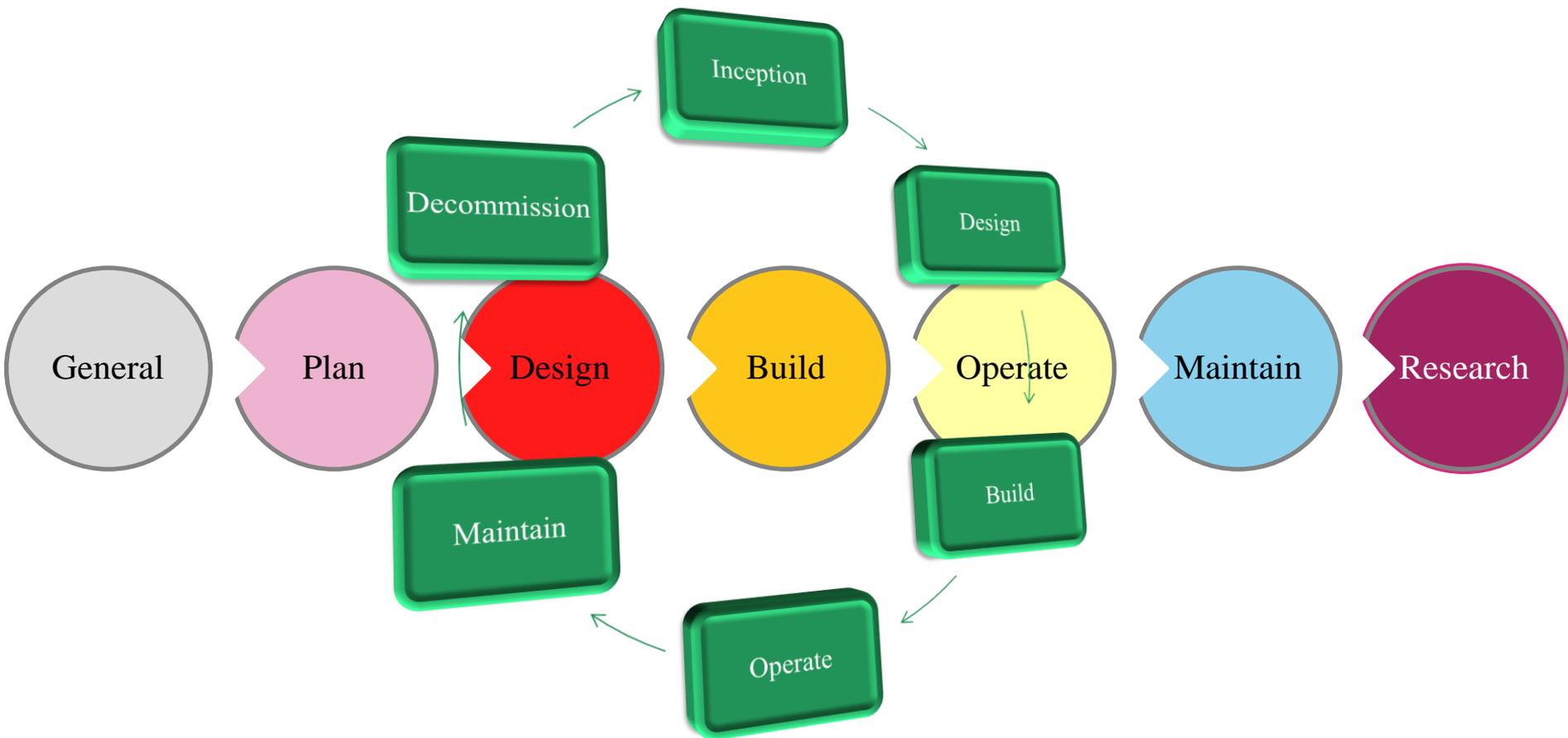
Discipline Based Manuals



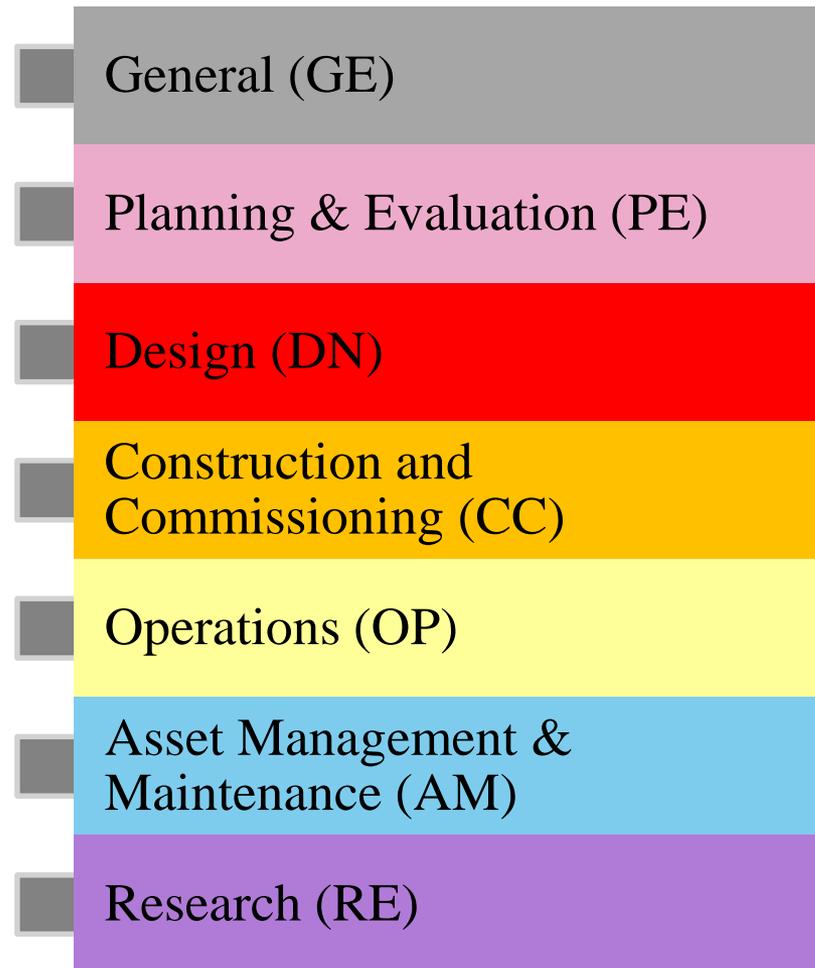
Project Lifecycle



Life-cycle Activities



7 'Pillar' Activities

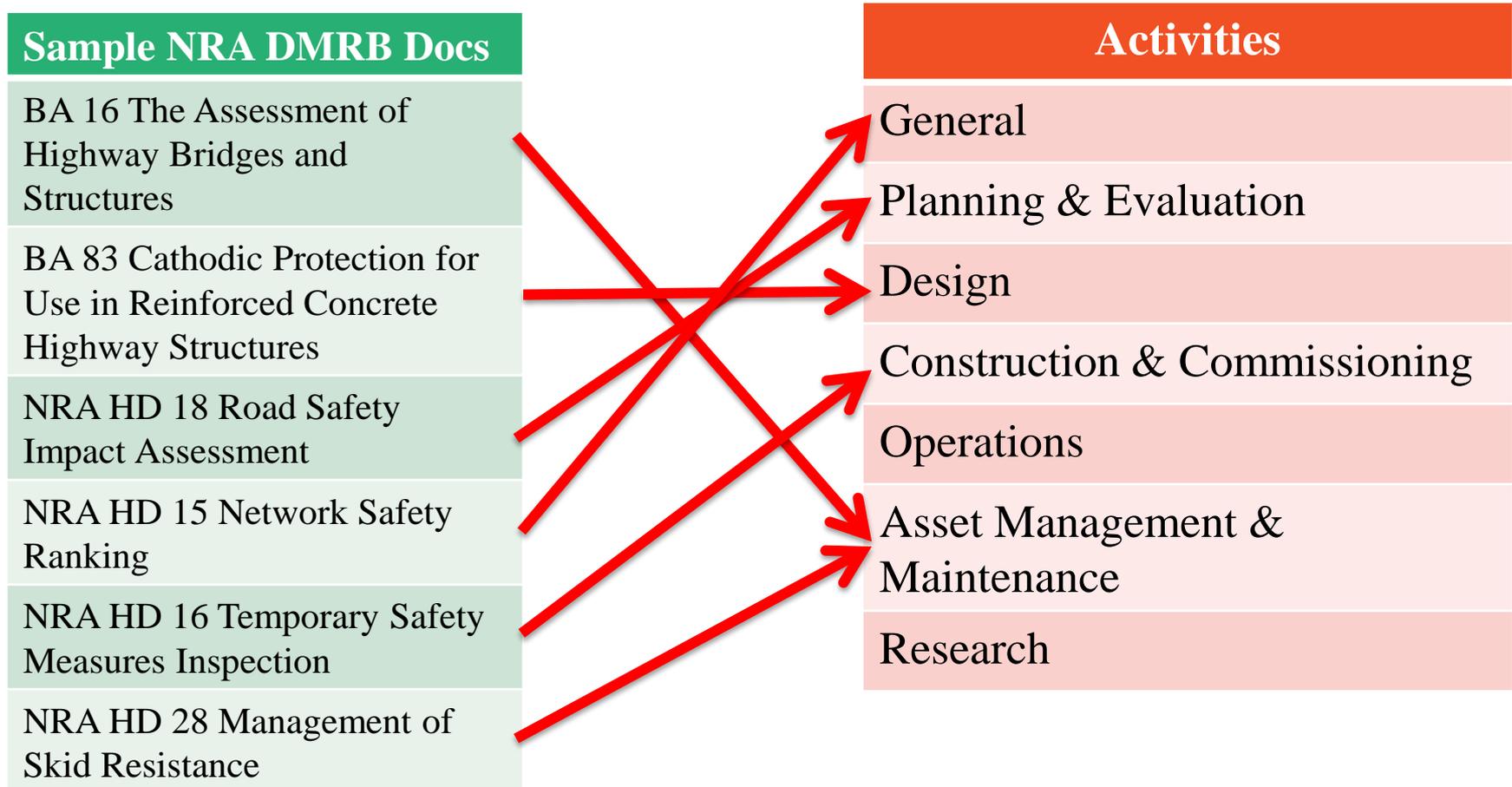


Discipline ‘Streams’

Design (DN)

- | | | |
|--------------------------------------------------------------|------------------------------------------------|-------------------------------------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Archaeology (ARC) | <input type="checkbox"/> Lighting (LHT) | <input type="checkbox"/> Track Alignment and Clearances (TAC) |
| <input type="checkbox"/> Buildings (BLD) | <input type="checkbox"/> Other Documents (OTH) | <input type="checkbox"/> Traffic (TRA) |
| <input type="checkbox"/> Drainage (DNG) | <input type="checkbox"/> Pavement (PAV) | <input type="checkbox"/> Trackworks (TWK) |
| <input type="checkbox"/> Design Management (DNM) | <input type="checkbox"/> Road Equipment (REQ) | <input type="checkbox"/> Tunnels (TUN) |
| <input type="checkbox"/> Environment (ENV) | <input type="checkbox"/> Rail Systems (RSY) | <input type="checkbox"/> Urban Architecture and Landscaping (UAL) |
| <input type="checkbox"/> Earthworks (ERW) | <input type="checkbox"/> Rolling Stock (RSS) | <input type="checkbox"/> Urban / Rural Interface (URI) |
| <input type="checkbox"/> Geometry (GEO) | <input type="checkbox"/> Structures (STR) | <input type="checkbox"/> Utilities (UTL) |
| <input type="checkbox"/> Intelligent Transport Systems (ITS) | <input type="checkbox"/> Safety (STY) | |

Mapped Documents to System



Outline of TII Publications

Outline of TII Publications

- TII Publications is simply a **restructuring** of existing documentation
- All **existing documentation** contained on the NRA Standards website has been processed into the new system
- The **technical contents** of the NRA Standards and other documentation has not changed

Outline of TII Publications

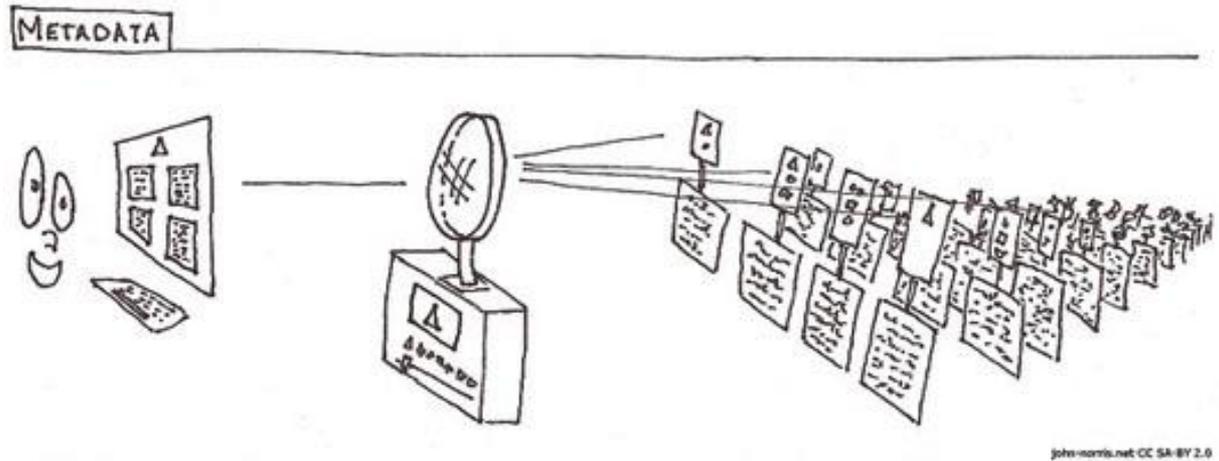
- **TII Publications (Standards)**
 - NRA Standards (NRA BDs, GDs, HDs, TDs, etc..)
 - NRA Advice Notes (NRA BAs, HAs, TAs, etc...)
 - NRA Specification for Roadworks
 - Notes for Guidance to the NRA Specification for Roadworks
 - NRA Method of Measurement for Roadworks
 - Notes for Guidance to the NRA Method of Measurement for Roadworks
 - NRA Road Construction Details
 - *Future Developments?*

Outline of TII Publications

- **TII Publications (Technical)**
 - NRA Interim Advice Notes
 - NRA Technical Bulletins
 - Research Papers
 - Technical Reports
 - *Future Developments?*

Elements of TII Publications

- New Covers
- Expanded Metadata
- New Database
- New Website



Departures from Standards and Specification (including Erratum No. 1, dated June 2013)

GE-GEN-01005
March 2013

GE General Standards



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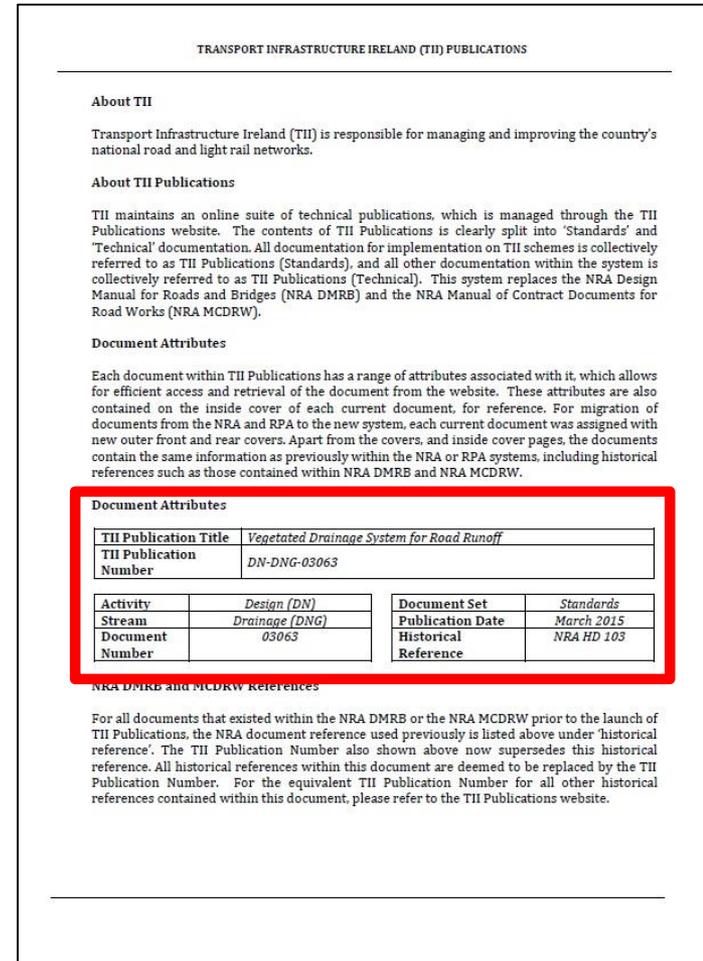
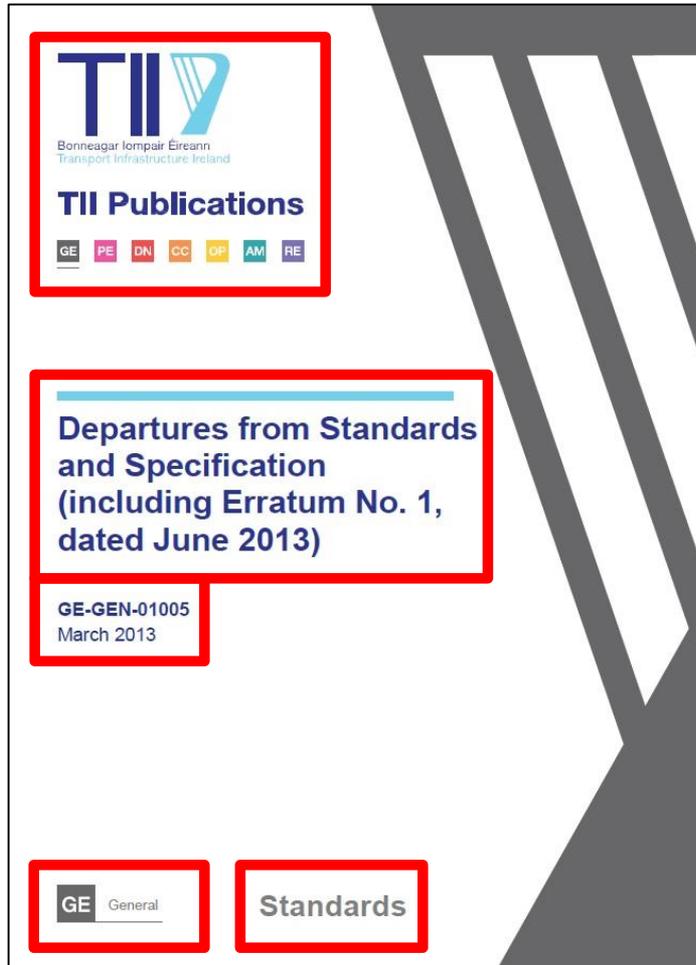
> TII Document Library

Library of non-technical TII documentation on the main TII website

Document Set Full	TII Publication Title	Version Type Full	Activity	Stream	Document Set	Version Type	Publication Date	Historical R
Standards	Management of Skid Resistance	Published	AM	PAV	S	P	01/11/2011	NRA HD 28
Technical	Interim Guidelines for Pavement and Maintenance Works	Published	AM	PAV	T	P	01/01/2007	
Standards	Pavement Asset Repair and Renewal Scheme Approval Procedure	Published	AM	PAV	S	P	01/03/2013	NRA HD 30
Standards	Pavement Assessment, Repair and Renewal Principles	Published	AM	PAV	S	P	01/03/2015	NRA HD 31
Standards	Implementation of BS 5400 Part 10: 1985 - Code of Practice for Fatigue	Withdrawn	AM	STR	S	W	01/08/2010	NRA BA 9
Standards	The Use of BS 5400 Part 10: 1985 - Code of Practice for Fatigue	Published	AM	STR	S	P	01/06/2014	NRA BA 9
Standards	The Assessment of Road Bridges and Structures	Withdrawn	AM	STR	S	W	01/08/2010	NRA BA 16
Standards	The Assessment of Road Bridges and Structures	Published	AM	STR	S	P	01/06/2014	NRA BA 16

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Document Covers



Document Covers



TII Publications



**Departures and Specific
(including E
dated June**

GE-GEN-01005
March 2013



TII Publications



**Road Safety
Assessment**

PE-PMG-02001
June 2012

PE Planning & Evaluation



TII Publications



**Vegetated Di
for Road Ru**

DN-DNG-03063
March 2015

DN Design



TII Publications



**Specification
Works Serie
and Service
Amendment
(May 2015)**

CC-SPW-00500
March 2015

CC Construction & Commissioning



TII Publications



**The Design o
Bridges**

AM-STR-06008
June 2014

AM Asset Management & Maintenance



TII Publications



**Drainage Design For
National Road Schemes -
Sustainable Drainage
Options**

RE-CPI-07001
May 2014

RE Research

Technical



GE General

Metadata Referencing

- Metadata used;
 - Document Title
 - Activity
 - Stream
 - Reference number

TII Publication Number

DN-ITS-03020

(DN for Design) – (ITS for Intelligent Transport Systems) – (Reference No.)

Metadata Referencing

- Further Meta-Data;
 - Historical Reference (i.e. NRA TD 9, Series 500, etc..)
 - Document Set ('Standards' or 'Technical')
 - Document Status (Published or Withdrawn)
 - Publication Dates
 - Withdrawal Dates

New Website and Database

Library Tools														
gavo'd														
Site Actions														
Documents Library														
New Open & Check Out Manage Share & Track Copies Workflows														
Type	Name	ActivityFull	StreamFull	Document Number	Document Set Full	TII Publication Title	Version Type Full	Activity	Stream	Document Set	Version Type	Publication Date	Historical R	
	AM-PAV-06045-01	Asset Management & Maintenance (AM)	Pavement (PAV)	06045	Standards	Management of Skid Resistance	Published	AM	PAV	S	P	01/11/2011	NRA HD 28	
	AM-PAV-06047-01	Asset Management & Maintenance (AM)	Pavement (PAV)	06047	Technical	Interim Guidelines for Pavement and Maintenance Works	Published	AM	PAV	T	P	01/01/2007		
	AM-PAV-06049-01	Asset Management & Maintenance (AM)	Pavement (PAV)	06049	Standards	Pavement Asset Repair and Renewal - Scheme Approval Procedure	Published	AM	PAV	S	P	01/03/2015	NRA HD 30	
	AM-PAV-06050-01	Asset Management & Maintenance (AM)	Pavement (PAV)	06050	Standards	Pavement Assessment, Repair and Renewal Principles	Published	AM	PAV	S	P	01/03/2015	NRA HD 31	
	AM-STR-06001-01	Asset Management & Maintenance (AM)	Structures (STR)	06001	Standards	Implementation of BS 5400 Part 10: 1980 - Code of Practice for Fatigue	Withdrawn	AM	STR	S	W	01/08/2010	NRA BA 9	
	AM-STR-06001-02	Asset Management & Maintenance (AM)	Structures (STR)	06001	Standards	The Use of BS 5400: Part 10: 1980 - Code of Practice for Fatigue	Published	AM	STR	S	P	01/06/2014	NRA BA 9	
	AM-STR-06002-01	Asset Management & Maintenance (AM)	Structures (STR)	06002	Standards	The Assessment of Highway Bridges and Structures	Withdrawn	AM	STR	S	W	01/08/2010	NRA BA 16	
	AM-STR-06002-02	Asset Management &	Structures (STR)	06002	Standards	The Assessment of Road Bridges and Structures	Published	AM	STR	S	P	01/06/2014	NRA BA 16	

New Website and Database



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Welcome to TII Publications

TII's online suite of standards and Technical publications related to national road and light rail networks in Ireland

Design of stru ✕ SEARCH

- Interim Requirements for the Use of Eurocodes for the Design of Road Structures (including Geotechnical Works) GE
GE-POL-01008 (NRA IAN 02/11)
- Design of Corrugated Steel Buried Structures with Spans Greater Than 0.9 Metres and up to 8 Metres [and Correction, February 2002] DN
DN-STR-03003 (BD 12)
- Design of Support Structures for Roadside Furniture DN
DN-STR-03018 (NRA BD 94)
- The Design of Concrete Highway Bridges and Structures with External and Unbonded Prestressing AM
AM-STR-06016 (NRA BA 58)
- The Design of Concrete Highway Bridges and Structures - Use of BS 5400: Part 4: 1990 AM
AM-STR-06027 (NRA BD 24)
- The Design of Buried Concrete Box and Portal Frame Structures AM
AM-STR-06029 (NRA BD 31)
- The Design of Concrete Highway Bridges and Structures with External and Unbonded Prestressing AM
AM-STR-06026 (NRA BD 58)

Outline of

TII maintains
Publications. T
'Technical' do
All documenta
TII Publicatio
collectively re
available for

Recent Changes

View and updated TII Publications
Publication published recently

Road Look

Recent list of anticipated publications and
Publication date

Move to Standards

Find website for application or
Department of Departures to TII Publications

Document Library

Library of non-technical TII documentation on
the main TII website

Website – Advanced Searching



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Showing all document streams

[Refine by activity](#) ▼

Select all

Collaboration Projects - Europe (OPE)

Collaboration Projects - Ireland (OPI)

Construction Management

Drainage (DNG)

General (GEN)

Geometry (GEO)

Guidance on Specification for Works (GSW)

Intelligent Transport Systems (ITS)

Introduction (INT)

Pavement (PAV)

Policy (POL)

Project Management (PMG)

Requirements for Measuring and Pricing (RMP)

Road Equipment (REQ)

Safety (STY)

Specification for Works (SPW)

Standard Construction Details (SOD)

Strategic Management (SMG)

Structures (STR)

Technical Bulletins (TBU)

- All Blocks
- AM** Asset Management & Maintenance
- CC** Construction & Commissioning
- DN** Design
- GE** General
- PE** Planning & Evaluation
- RE** Research

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REFINE RESULTS BY: [Block / Streams](#) Set: Standards and Technical Type: Published

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60 Documents found

ASSET MANAGEMENT & MAINTENANCE

AM-PAV-06045 - Management of Skid Resistance	<i>NRA HD 28</i>	<i>01 Nov 2011</i>	<i>Published</i>
AM-PAV-06047 - Interim Guidelines for Pavement and Maintenance Works		<i>01 Jan 2007</i>	<i>Published</i>
AM-PAV-06049 - Pavement Asset Repair and Renewal - Scheme Approval Procedure	<i>NRA HD 30</i>	<i>01 Mar 2016</i>	<i>Published</i>
AM-PAV-06050 - Pavement Assessment, Repair and Renewal Principles	<i>NRA HD 31</i>	<i>01 Mar 2016</i>	<i>Published</i>
AM-STY-06043 - Road Safety Inspection Guidelines	<i>NRA HA 17</i>	<i>01 Dec 2014</i>	<i>Published</i>
AM-STY-06044 - Road Safety Inspection	<i>NRA HD 17</i>	<i>01 Dec 2014</i>	<i>Published</i>
AM-STY-06046 - NRA HD 17 Road Safety Inspections - Inspection Team Qualifications		<i>30 Jun 2012</i>	<i>Published</i>
CONSTRUCTION & COMMISSIONING			
CC-GSW-00001 - Notes for Guidance on the Specification for Road Works Series NG 000 - Introduction	<i>Series NG 000</i>	<i>01 Mar 2016</i>	<i>Published</i>
CC-GSW-00100 - Notes for Guidance on the	<i>Series NG 100</i>	<i>01 Mar 2016</i>	<i>Published</i>

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[Home](#) · [NRA TD 19 - Safety Barriers \(including Amendment No. 1, dated December 2014\)](#)



DN-REQ-03034 - Safety Barriers (including Amendment No. 1, dated December 2014)

TII Publication Number	DN-REQ-03034	Publication Date	31/05/2014
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Document Set	Standards	Activity	DESIGN
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Stream	Road Equipment (REQ)	Historical Reference	NRA TD 19
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Version Type	Published	Version Number	9
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Version History

Version 9 - May 2014

Version 8 - March 2013

Version 7 - January 2009

Version 6 - December 2007

Version 5 - June 2004

Version 4 - March 2003

Version 3 - March 2002

Version 2 - August 2001

Version 1 - December 2000

What's new and what stays the same?

What's new?

- Rebranding to TII from NRA
- Over-arching structure of Activities and Streams
- Database of documents based on expanded metadata
- TII Publications website
- Enhanced functionality for searching and listing documents
- TII Publication Number replaces NRA Standards References
- Increased flexibility to add documentation

What stays the same?

- Initially the technical contents of all documents
- The implementation and policies around standards
- The underlying processes around the development of standards
- Objectives of TII Publications (Standards) including;
*“...promote **quality and consistency of approach** in relation to the design and construction of road and bridge projects;
...to achieve an appropriate balance of **economy, safety, sustainability and durability** on road schemes”*

Future developments

Future developments - Standards

- Possible Standards document developments may include;
 - Adoption of Interim Advice Notes
 - Development of new Standards
 - Restructuring of existing Standards
 - Adoption of documentation currently outside of Standards to form part of TII Publications (Standards)

Future developments - Technical

- Possible Technical document developments may include adding;
 - TII Technical Policy Documents;
 - TII Strategic Reports on Technical Issues;
 - TII Technical Information Notes (such as Technical Bulletins);
 - TII Technical Approval Systems;
 - Other TII Technical Reports (e.g. Pilots and Trials)

Closing remarks

Closing remarks

- TII has developed a new system for TII Publications
- All documentation currently contained on the NRA Standards website has been processed into the new system
- A TII Publication Number will replace the familiar NRA Standards references (still visible as Historical References)
- A new website has been developed with increased functionality
- The technical contents of the Standards has not changed
- We expect the system to be launched by the end of 2015

TII Publications | Standards and Technical

THANK YOU!!!

TII National Roads Conference 2015, The Malton Hotel, Killarney
Thursday 24 September 2015

Gavin O'Donnell, Arup