Design Manual NR/GN/CIV/100/01



Design Advice Panel (DAP) Project Guidance



Document Verification



Design Advice Panel Design Manual NR/GN/CIV/100/01 Dec 2024

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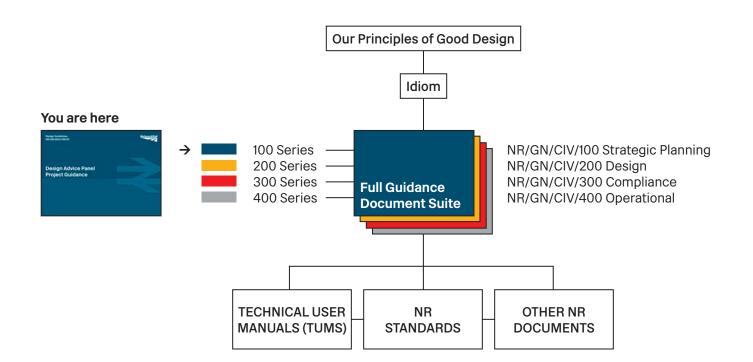
How to use the guidance suite



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The Network Rail Document Suite



References to other documents



Example:

National Standard

PRM NTSN

Technical Specification for Interoperability: Accessibility for Persons with Reduced Mobility

A full list of relevant documents, and other guidance suite documents is contained in section 4

About this document



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Purpose

This document provides guidance on assessing the suitability of projects for built environment design review, as well as the procedure for undertaking these reviews using the Network Rail independent Design Advice Panel (DAP).

Network Rail projects which are advised to undertake design review can be identified by using the Threshold Matrix Tool in Section 2.

Scope

This guidance is relevant to Sponsors, Project Managers, Local Authorities, Engineers and Design Consultants, and anyone involved in the inception, design and delivery of a built project. It covers new or modified operational buildings, schemes that have significant visual, public or architectural impact, and schemes requiring statutory consents or consultation. It also applies to third party projects following the adoption of the PACE (Project Acceleration in a Controlled Environment) process, which has succeeded GRIP (Governance for Railway Investment Projects).

This document is divided into the following sections:



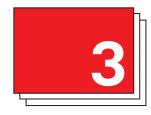
Section 1 Achieving Design Quality in Network Rail

Explains the purpose of design review and Network Rail's Principles of Good Design and Assurance.



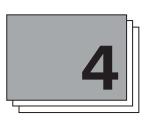
Section 2 **Design Review & Assurance**

The value of design reviews, The Threshold Matrix Tool. DAP process flowchart Design Assurance Process



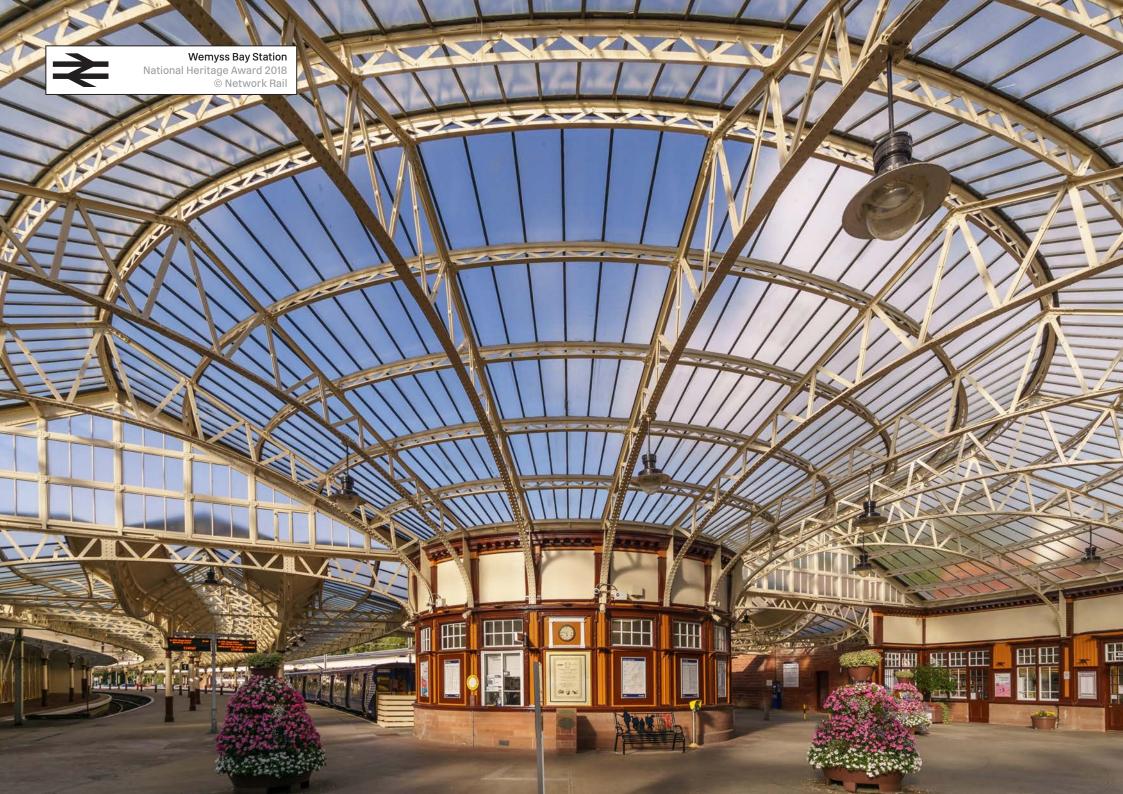
Section 3 **Design Review & the DAP**

The principles of design review, Types of reviews DAP Reports Design Council BEEs



Section 4
Support & References

Regional Design Champions
Contact details



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Foreword



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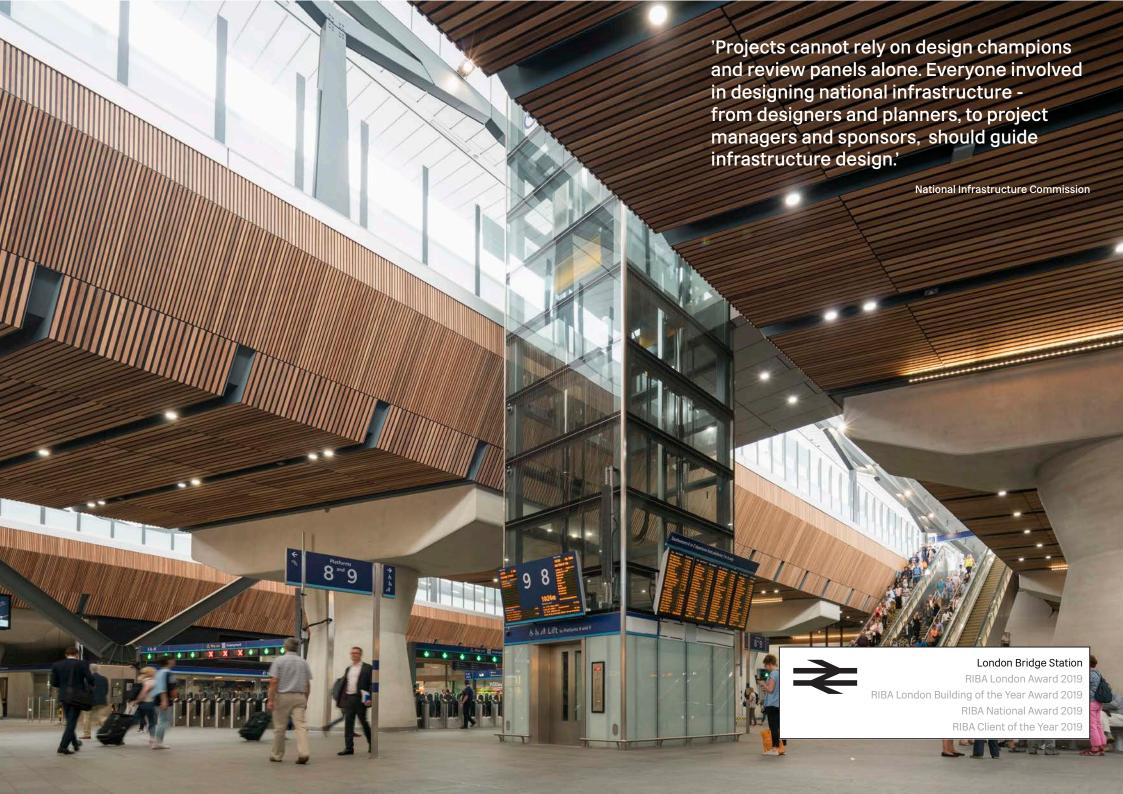
Network Rail sets out to put passengers and customers at the heart of everything it does. High quality design is a fundamental part of this commitment; it positively impacts the lives of millions of people; both through their everyday journeys but also by improving the quality of towns and cities in which they live.

Good design is also good business. It enables us to deliver assets cost-effectively, and efficiently, creating capital as well as checking operational value by reducing whole-life maintenance and operational costs. Well-designed infrastructure projects are essential in reducing greenhouse gases, working towards de-carbonisation and addressing climate change.

So the benefits of good design are compelling, and Network Rail is committed to increasing design knowledge across the organisation, embedding good design thinking in day-to-day practices and delivering better projects by considering design at the start of the project process rather than attempting to retrofit it as an afterthought at the end.

To help us achieve these ambitions Network Rail have put in place the independent Design Advice Panel. The panel supports Network Rail in embedding a cultural shift that puts good design at the centre of everything we do.

We commend what you have before you as a step, hopefully a big one, in the journey we are taking in making our railway as fit for our passengers and customers, and the sustainable future as we can, whilst producing assets as fit for purpose, beautiful, and long lasting as those we have inherited from our predecessors.





Achieving Design Quality in Network Rail

1.1 The Purpose of Design Review



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1.1.1 Network Rail Design Advice Panel

The independent Network Rail Design Advice Panel (DAP) supports Network Rail (NR) in prioritising and embedding design quality across its organisation. It does this by assessing whether NR built projects are of a high design quality, and have optimised the potential of the brief. This is achieved through the Design Advice Panel's key service, which is design review.

The Design Advice Panel's remit is to focus on the built environmental impact of projects, but is not directly related to other Network Rail panels, such as the Built Environment Accessibility Panel (BEAP).

The DAP and Design Reviews are run by the Design Council, an organisation independent to NR, and the government's advisor on design. (see Section 3)

Projects suitable for review may be identified by the Design Advice Panel Threshold Matrix Tool, which is available in Section 2 of this document.

1.1.2 Design Review

As the design and delivery of NR schemes are accelerated as part of controlled investment under NR/L2/P3M/201- PACE (Project Acceleration in a Controlled Environment) or are undertaken in a High

Street Environment - NR/L3/P3M/005, it becomes ever more important that projects of high value and impact are independently assessed during the Design Stage to check that the emerging designs are fit for purpose, and to assure their readiness for delivery. The DAP provides an independent and constructive design assurance service which focuses on improving the design outcomes of projects at the earliest stage. The earlier design review is undertaken the more effective it can be in rectifying potentially serious shortcomings in a design brief or proposal.

Design Reviews are closed meetings between independent built environment experts and Network Rail project teams, and are an opportunity for project teams to seek impartial and independent design advice. As an advisory service it provides critical feedback, observations and suggestions to improve projects. It does not seek to redesign them.

1.1.3 The Design Assurance Process

Network Rail's mandatory design assurance process is highlighted in standard NR/L2/CIV/003 - Engineering and Architectural Assurance of Building and Civil Engineering Works. This stipulates that for certain built environment projects a Form D (Architectural and Layout Acceptance) is submitted at the appropriate PACE milestones to reflect progressive design development and change.

NR/L2/CIV/003 also advises that the DAP Threshold Matrix (Fig 2.2) is utilised to assess the requirement for engagement with the DAP prior to the final submission of Form D documentation. For medium-high impact projects which trigger the Matrix Tool a design review is often recommended for Form D sign off.

The Design Review process is illustrated in Fig 2.3 of this document, and its relationship to the PACE Assurance Process is detailed in Fig 2.4.

Network Rail Documen

NR/L2/P3M/201

Project Acceleration in a Controlled Environment (PACE)

NR/L2/CIV/003

Engineering and Architectural Assurance of Building and Civil Engineering Works

NR/L2/ENV/015

Environment and Social Minimum Requirements for Projects -. Design and Construction

NR/L3/P3M/005

Design and Construction Management in a High Street Environment

Achieving Design Quality in Network Rail

1.2 Design Principles and Assurance



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1.2.1 Assuring Design Quality

With the support of the DAP, Network Rail has a number of processes to assure we continue to deliver on a commitment to high quality design. These include Our Principles of Good Design and delegated regional Design Champions (see Section 4).

NR is dedicated to assuring high quality design is one of the cornerstones of all built environment projects - no matter whether they are being run internally, procured externally, or funded and delivered through a third party. Project teams should plan and budget to utilise our processes to assure that quality.

1.2.2 Compliance

As well as visual impact, design review includes design assurance and compliance across many areas during the planning, design and delivery stages. It covers accessibility, inclusive design, safety, security, and the environment.

Design Review, as undertaken by the DAP under Standard NR/L2/CIV/003/Form D, covers the design and layout of buildings and the associated built environment. By distinction, Design Review for Health & Safety is mandated under NR/L2/OHS/0047 CDM (Construction Design and Management Standard for Health and Safety). NR/L2/ENV/015 sets out NR's minimum requirements for the management of environmental and social risks during design.

1.2.3 The Principles of Good Design

'People Ignore design that ignores people' is an enlightened quote that sits at the core of user experience based design. Infrastructure is designed for people, not for architects or engineers. The National Infrastructure Commission's Design Principles for National Infrastructure (Fig 1.1) together with Network Rail's Principles of Good Design (Fig 1.2) should underpin all projects at early conception, and be consulted at the earliest possible stage by sponsors, project managers, and design consultants.

These documents, with their focus on people, place, climate and value, provide a design framework and vision which should guide all NR development of the built environment. These principles should be used by anyone commissioning, overseeing or supporting a railway project.

The project response to each principle should be provided as part of the completion of Form D under NR/L2/CIV/003. These responses are also linked and central to the advice provided in any report provided by the Design Advice Panel.

The latest principles can be accessed on the Buildings and Architecture Design Guidance page on the Network Rail website, or may be requested from the Technical Authority.

- Climate
- People
- Places
- Value



Fig 1.1: National Infrastructure Commission Design Principles for National Infastructure

- Identity
- Passengers
- Community Focused
- Collaborative
- Inclusive
- Connected
- Contextual
- · Enhancing Heritage
- Innovative
- Environment



Fig 1.2: Network Rail Principles of Good Design



Design Advice Panel (DAP) **Design Review & Assurance**

2.1 The Value of Design Reviews



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2.1.1 The effectiveness of Design Reviews

All projects normally review significant investment projects at Sponsor/Programme Manager level. At this time teams may wish to go further by taking advantage of the availability of independent built environment specialists with particular knowledge and expertise of a place or discipline, such as an accessibility consultant or town planning expert.

Design Reviews are a highly efficient and effective method of improving the quality of design for the built environment, which is recognised in both National Infrastructure policy and local planning policy. They can assist with early design and planning applications, adding a layer of expertise that assists outline project development. It gives decision makers and project teams the opportunity and confidence to challenge poorly defined project requirements, and to identify unresolved design issues or third party proposals that have not had the benefit of railway-related design assurance, or even independent review.

As an NR authorised review process the Design Advice Panel (DAP) can even help to align and resolve design challenges between local authorities, operators, and other key NR stakeholders. It supports innovative, high quality design solutions that aim to meet the needs of communities and passengers, enabling projects to quickly and successfully negotiate subsequent building control and assurance stages.

2.1.2 Targeted advice at critical project stages

Design Reviews are best undertaken at the earliest possible stage in project development, helping a project sponsor to be certain that investment is made wisely and efficiently. It is most effective at the early PACE milestones of a project - particularly ES2 or ES3. It is here that poorly defined briefing requirements, site issues, design errors or omissions can be highlighted and tackled. Any of these individually may prove to be particularly costly to rectify at a later stage of delivery (see Fig 2.4).

Sponsors, Third Party stakeholders, and outside investors in the railway are strongly advised to consult the DAP at crucial periods during initial project development - but particularly at the point where project teams have assessed a range of design options, and are about to select a single preferred option to take forward into development. This will ideally be before any formal consents, such as planning.

The DAP can provide unbiased strategic guidance to assist projects in the clarification and definition of specific project requirements, such as accessibility, town planning and sustainability. This can often make a positive difference to the speed and outcomes of project delivery, whilst avoiding later risk and abortive costs which may cause reputational harm to Network Rail and its partners.



Fig 2.1: Project Sponsor team reviewing an investment project

Network Rail Document

NR/L2/P3M/201

Project Acceleration in a Controlled Environment (PACE)

NR/L2/CIV/003

Engineering and Architectural Assurance of Building and Civil Engineering Works

2.1 The Value of Design Reviews



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2.1.3 Early Project Design Considerations

Where applicable, it is advisable that the following factors should be considered at the earliest stage of building design feasibility (PACE milestone ES2). These considerations and any related constraints should form part of the identification and endorsement of the single option milestone at ES3:

- Permitted development status
- · Application or otherwise of the Building Safety Act
- Planning permission issues including local development plans, listed building or heritage status
- · Local context, materials and finishes
- · Visual impact
- · Sustainability and social value
- · Building accessibility and fire safety
- The possible effects of the construction and the effect of the construction works on road traffic and on those living or working close to the Site.

To avoid abortive design effort, consultation with any planning authority stakeholders should commence as early in the overall design process as practicable.

Early engagement with the DAP at this stage may highlight further opportunities, as well as generating confidence that the project requirements align with the relevant external stakeholders.

2.1.4 Building Safety Act/Building Regulations Amendment 2023

The Building Regulations (Part 2A) Amendment 2023 came into force in October 2023 as a consequence of the Building Safety Act 2022*. This provides a new framework that outlines the responsibilities of duty holders, designers and contractors in confirming compliance and competency throughout the delivery of buildings, including suitable arrangements for planning, managing, and also monitoring of the design.

Building regulations set standards for the design and construction of buildings, including requirements to confirm that fire safety is observed, fuel and power is conserved and facilities are provided for people, (including those with disabilities) to access and move around safely inside buildings.

The 2023 Amendment may have a significant effect on the level of design review and monitoring that CDM clients such as Network Rail could, in future, be expected to demonstrate on projects which expose the public to high risk. This includes those which may be undertaken in a non-railway or High Street Environment -NR/L3/P3M/005, such as oversite developments, offices, car parks, retail units, public realm, and masterplans (see Fig 2.5) and may increasingly apply to new or planned medium rise residential developments centred around transport hubs.

The UK Building Safety Act introduces three key gateways that are crucial for confirming the safety and compliance of HRBs (High Risk Buildings):

Gateway 1 – Planning This is the initial gateway and occurs during the planning phase of a higher-risk building. It involves scrutiny of the proposed design and safety measures to confirm that they meet the required standards. This gateway has been in place since August 2021.

Gateway 2 – Before Construction Applying to all buildings, gateway two takes place before construction begins. It involves a detailed review of the construction plans, materials and safety measures. Once gateway 2 approval is obtained, construction can proceed.

Gateway 3 – Before Occupation This new gateway occurs before the building can be occupied. It confirms that all safety and compliance standards have been met throughout the construction and inspection process.

Standards & Regulations

Building Safety Act 2022 Building Regulations Amendment 2023 (Part 2A) PAS 8670/ PAS 8671/PAS 8672

NR/L3/P3M/005 Design and Construction Management in a High Street Environment

NR/L2/OHS/0047 Managing Health and Safety (CDM)

^{*} Note: Currently only certain parts of the Building Safety Act 2022 apply directly to Scotland.

2.2 Threshold Matrix Tool



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Impact risk profile criteria based on Climate, People, Places and Value

Using the Threshold Matrix

The DAP Threshold Matrix tool (Fig 2.2) may be used to assess the anticipated impact criteria of a project based on the published NIC principles of **climate**, **people**, **places and value**. It is designed to help projects determine where and why a design review may be triggered.

High or Medium impact schemes are defined as projects with potentially significant impacts on the NIC criteria. Projects falling into this category are strongly advised to undertake a DAP review no later than PACE Milestone ES4 - particularly those which have not previously followed the initial PACE stage process prior to PACE milestone ES3/ES4. (eg; a 3rd Party sponsored project being transferred to Network Rail with no prior history of review).

Low impact schemes which do not exceed an AFC of £10m* generally do not need to engage the DAP if other impact criteria are low. While these projects may initially be seen as low risk, it may still be advisable to undertake a workshop review (subject to a route based assessment) if elements of the scope subsequently change.

AFC (Anticipated Final Cost) is the total cost of construction excluding permanent way civils & systems Low Medium High Project is an Unoccupied Non-Complex support or line-side Project is subject to Planning Consent and full statutory Project is a Listed Building, or is within					
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Fig 2.2: DAP Threshold Assessment Matrix Tool

Project scope and opportunity

2.3 Design Advice Panel engagement



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Engagement of the DAP is often a Route based decision based on a low project risk profile. However projects are advised to obtain key stakeholder agreement before proceeding beyond PACE ES3/ES4 approval gates if the design has not been previously reviewed.

The requirement to engage the DAP should be prescribed in the Project Requirements and authorised by the Project Sponsor/Manager. This is of particular importance if Network Rail are accepting a 3rd party scheme which has not been previously reviewed.

An example of this may be a Developer or Local Authority funded project taking place on Network Rail Managed Infrastructure, or any works which may have a lasting negative reputational impact on the railway.

Fig 2.3 illustrates the process paths project teams may follow to undertake design review to facilitate Form D approval for schemes that fall within medium to high impact risk profiles.

DAP engagement may, in certain cases relating to a higher risk profile, be stipulated as a condition of Form D acceptance.

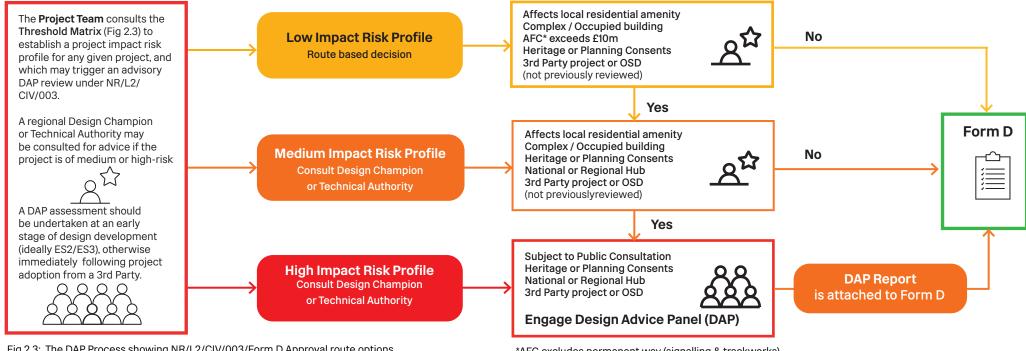


Fig 2.3: The DAP Process showing NR/L2/CIV/003/Form D Approval route options

*AFC excludes permanent way (signalling & trackworks)

2.4 PACE Assurance Process & DAP



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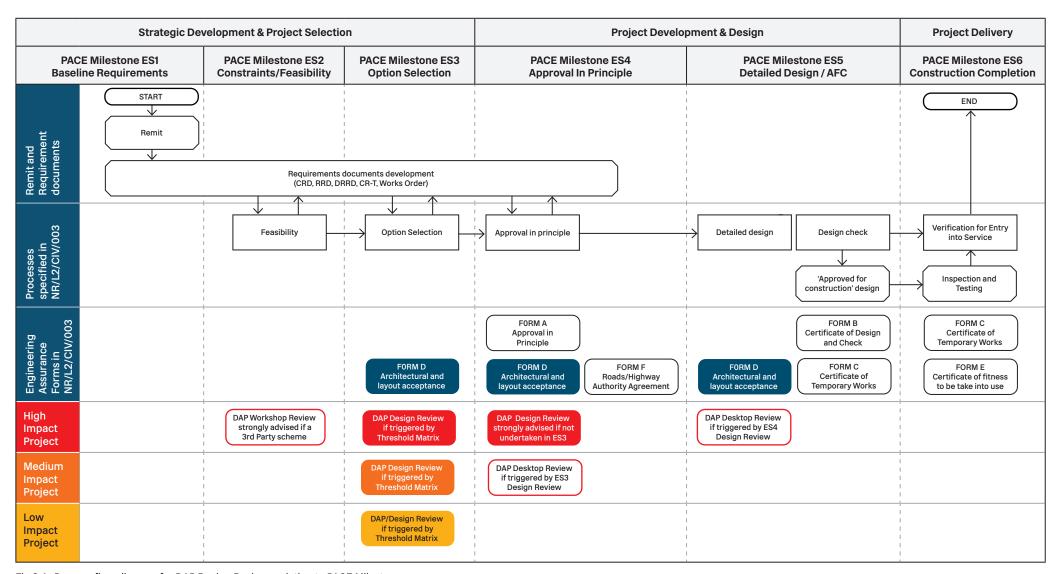


Fig 2.4: Process flow diagram for DAP Design Reviews relating to PACE Milestones

Key

Process

Process pre-defined

Forms associated with NR/L2/CIV/003

FORM D

DAP Design Review advised

DAP Desktop or Workshop Review advised

2.5 Other Design Stages & DAP



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High Street Environment, RIBA & Masterplanning

The Building Safety Act 2022 introduces significant regulatory change to the UK construction industry, with greater safety implications for station related developments above and around stations that may fall within a High Street Environment project category.

This places greater emphasis on design assurance. Independent design reviews at key design stages may usefully assist Network Rail Client teams in the assessment of Concept or Outline designs for the purpose of design acceptance. The NR DAP can quickly provide this independent advice on request.

While the High Street Environment standard does not formally follow the PACE process its key **outline design** stage aligns with late PACE Phases 1, RIBA Stage 2, and BSA Gateway 1, where early concept and outline consultation for planning approvals are typically undertaken.

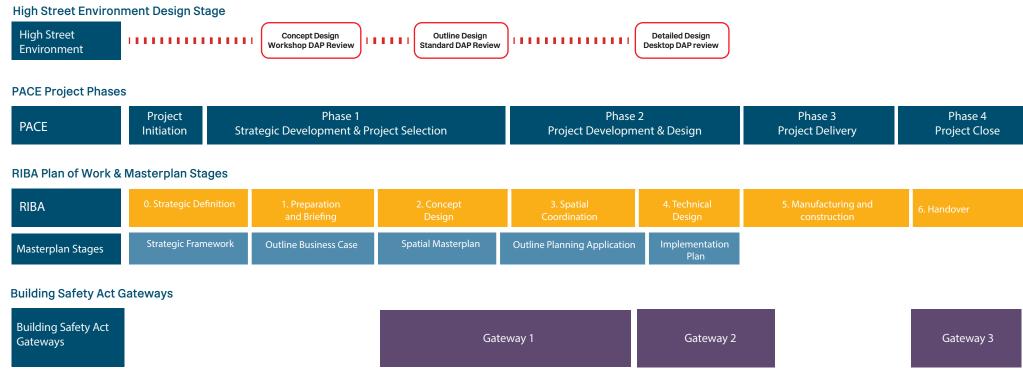


Fig 2.5: Comparative Timeline of design development stages and DAP design review opportunity





Design Review Panel
Design Review & the DAP

3.1 The Principles of Design Review



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3.1.1 What is Design Review?

Design Review is an independent evaluation process in which a panel of built environment experts, with no declared conflict of interest, assess the design of a proposal. The benefits of early focused design reviews are proven and substantial.

It is also a collaborative and constructive process formulated to help project teams improve the final design outcomes of their proposals. A review provides project teams with the opportunity to gain independent, multidisciplinary expert advice at key stages of the design process. The process is a strictly internal and confidential one, so no findings or reports are published or made available externally without project consent.

DAP reviews are focused on key outcomes for people and places by improving the quality of our buildings, structures, and public realm. The service is provided and arranged on behalf of NR by the Design Council, who can call on an unrivalled pool of built environment expert practitioners

with relevant experience in railway related design and development - often with local knowledge, a record of good design in their own projects, and the skills to appraise rail projects objectively. These experts offer feedback and critical observations that may lead to the improvement of projects, but without redesigning them.

DAP Reviews follow principles based on the 'double diamond' process (Fig 3.1.1) which helps teams to holistically revisit the requirements of a particular project, rather than mistakenly assume these have all been fully captured. Insight gathered from this divergent phase can help to re-converge and re-focus the key challenges and critical solutions for many projects, extracting far greater long-term value.

DAP Review Reports and feedback can also significantly contribute to PACE Engineering Milestone Reviews (EMR) and Phase Readiness Reviews (PRR) under NR/L2/P3M/201, actively addressing and resolving problems which are complex, or which generate significant risk exposure.

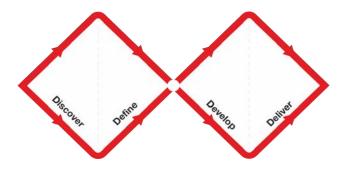


Fig 3.1.1 The Design Council 'Double Diamond' design process diagram

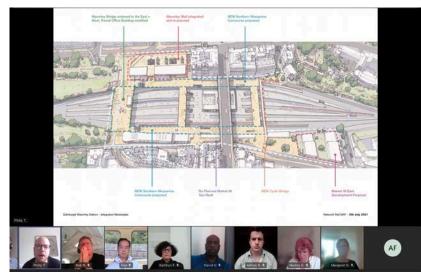


Fig 3.1.2 An online Design Advice Panel design review session © Design Council

3.1 The Principles of Design Review



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3.1.2 Design Council's 10 principles of Design Review



Independent

It is conducted by people who are unconnected with the project's promoters and decision makers, and it assures that conflicts of interest do not arise.



Expert

It is carried out by suitably trained people who are experienced in design and know how to criticise constructively. Review is usually most respected where it is carried out by professional peers of the project designers, because their standing and expertise will be acknowledged.



Accountable

The Review Panel and its advice should be clearly seen to work for the benefit of the public. This should be ingrained within the panel's terms of reference.



Multidisciplinary

It combines the different perspectives of architects, urban designers, urban and rural planners, landscape architects, engineers and other specialist experts to provide a complete, rounded assessment.



Transparent

The panel's remit, membership, governance processes and funding should always be in the public domain.



Proportionate

It is used on projects whose significance, either at local or national level, warrants the investment needed to provide the service.



Timely

It takes place as early as possible in the design process, because this can avoid a great deal of wasted time. It also costs less to make changes at an early stage.



Advisory

A design review panel does not make decisions, but it offers impartial advice for the people who do.



Objective

It appraises projects according to reasoned, objective criteria rather than the stylistic tastes of individual panel members.



Accessible

Its findings and advice are clearly expressed in terms that design teams, decision makers and clients can all understand and make use of.

3.2 Types of Reviews



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3.2.1 There are three ways of undertaking an independent design review by DAP:

These are a Standard Design Review, a Workshop Design Review or a Desktop Review. Each type is explained in greater detail under Section 3.2 When deciding which type of review is best suited to a project teams should be guided by project impact as determined by the Threshold Matrix on page 18.

In general **High** Impact projects typically require a full day review, while **Medium** impact projects may only require a half day.

The scale, complexity and impact of a project will have a significant influence on the decision of which type of review it may be advisable to select.

Projects should carefully consider the time required to provide the necessary background analysis as well as any detailed design proposals.

Standard Design Review Full & Half Day



Typically **High impact** projects
Requiring a full day Design Review
as part of a selected design phase

Workshop Design Review Full & Half Day



Typically **Medium impact** projects at an early strategic phase requiring a full or half-day Workshop Review.

Desktop Reviews Half Day



Typically **Medium/Low impact** projects at late design phase requiring a half-day Desktop Review.

- → Full-day Reviews typically run for six hours and half-day Reviews typically run for three hours.
- NOTE: In addition to these services Design Council can provide bespoke design advice sessions as requested.

Fig 3.2 Types of Independent Design Reviews

3.2 Types of Reviews



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3.2.2 Standard Design Review

Standard Design Reviews are carried out as presentation sessions, where the team presents the project to the panel. It gives the design team the opportunity to make a personal case for their ideas, engage in discussion and hear the panel's comments directly.

Standard Design Reviews can be undertaken at PACE Stages ES2, ES3, ES4 and ES5.

The panel consists of a Chair and five panel members. The project team, Design Council staff and other agreed upon stakeholders attends Standard Design Reviews.

Standard Design Reviews can either be held as a full-day or half-day meeting. The session includes a real or virtual site visit, presentations on strategic and detailed issues, panel discussion and a chair summary of comments and advice.

3.2.3 Workshop Design Review

Design Workshops are a more collaborative and informal Design Review meeting. They are intended as a working session to support the project team in solving design challenges. Workshops are best suited for projects in the early stages of development which have more flexibility for change or that are struggling to resolve certain strategic challenges.

Workshop Design Reviews can be undertaken at PACE Stages ES2 and ES3.

The panel consists of a Chair and three panel members. The project team, Design Council staff and other agreed upon stakeholders will attend workshops.

Workshop Design Reviews can either be held as a full-day or half-day meeting. The session includes a real or virtual site visit, project team presentations, group discussion and/or working session followed by a chair summary of advice.

3.2.4 Desktop Design Reviews

Desktop Design Reviews are much smaller, focused meetings between panellists and Design Council staff. The panel will review a set of drawings and provide comments in the form of a Design Advice Report. This approach should be utilised when a quick assessment of small changes to previously reviewed projects, or of highly specific elements is advised. For example, an accessibility, materials, lighting or environmental strategy requires additional refinement.

Desktop Design Reviews can be undertaken at PACE Stages ES4 and ES5.

The panel will consist of a Chair and one panel member. Design Council Staff will also attend. The project team is not present at this meeting.

3.3 Design Review Timeline



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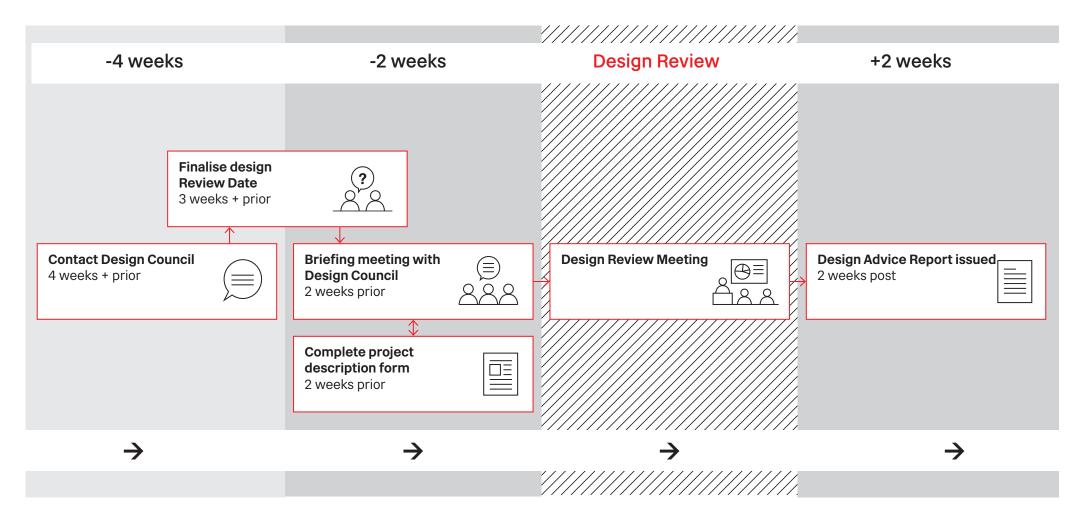


Fig 3.3 The Design Review time line showing preparation and response time from start to finish.

3.4 Preparation



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3.4.1 Arranging a Panel Meeting

The first step to schedule a Design Review meeting is to contact Design Council's Architecture & Built Environment team. This can be done by the Project Manager or Sponsor and should be done one month in advance of the desired meeting date.

A Design Council Lead Programme Manager will be appointed to manage the review and will be your key point of contact throughout. They will help you in deciding which Design Review meeting type (Fig 3.2) is best suited for the project.

Further Design Council information and contact details can be found in Section 3.10.

3.4.2 Virtual vs Face-to-Face

Design Council offers face-to-face and virtual Design Reviews. When a project is first reviewed a face-to-face meeting is recommended, pending exceptional circumstances. Digital reviews can be utilised for follow-up reviews as well as for briefing meetings in advance of formal session.

3.4.3 Venues

Design Review venues in London can be arranged by Design Council. For Reviews held outside of London, securing a venue is the responsibility of the project team. This includes any associated costs such as hire and refreshments. Design Council can provide support in selecting an appropriate venue that meets standard review venue requirements. Venues should:

- Be fully accessible, with enough room for everyone in attendance to sit and circulate comfortably.
- Have space to display drawings and models as Advised.
- Have audio-visual equipment for digital presentations as advised.
- Be located close to the site.

3.4.4 Briefing Meetings

Two weeks prior to the Design Review a Briefing Meeting will be scheduled by Design Council. The meeting is an opportunity for Design Council staff to understand the project better; provide recommendations for the upcoming Design Review; and answer any questions. This meeting can be held in London or virtually. This meeting is attended by the project team and Design Council.

3.4.5 Project Descriptions Forms

Design Council's Project Description Forms should be completed at least two weeks prior to the Design Review date. This form is to help Design Council staff and panel members prepare for the Design Review meeting. It is split into two parts;

- Part 1 outlines basic project information advised by Design Council to begin the process of setting up the Design Review meeting.
- Part 2 captures high level information on the proposal, including how the project is addressing Network Rail's Principles of Good Design, to help brief the design council staff and panel members in advance of the Design Review meeting.

Design Council staff issue the form to the project team on request when contacted.

3.5 What to expect & summary of evidence



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What the DAP is expecting to see

While providing advice to design teams about how to best prepare for a Design Review, the DAP understands that project teams will have a unique understanding of their project and will subsequently know how best to present it. The following information should be used as guidelines for the content of a presentation. The specific way this information is conveyed is subject to the design team's discretion.

Project teams should explain a project to the panel by first outlining the brief and nature of the site, and then describing the design proposals by proceeding from the strategic to the detail. The presentation material to be used will depend on the stage the project is at, its size, and nature. The best presentations feature a clear narrative of the project through the boards, with the 'story' of the design legible even without a presenter.

Analysis and explanation is usually most successful in the form of annotated drawings, diagrams and models rather than in writing (a picture is worth a thousand words). It is vital that all the information presented is legible and easily understandable, as review panels are unlikely to have time to closely read all text.

Architectural design and layout is more than simply aesthetics and appearance. Aspects such as planning, design scope clarity, accessibility and evacuation, capacity evaluation, diversity impact assessments, sustainability, materials and maintenance strategies,

urban realm design and the wider contextual relationship of the project, are of equal significance. These should be captured in the emerging Form D documentation, which often forms a good basis of a presentation to the DAP.

Projects should demonstrate that they have been involved in a consultation process with relevant stakeholders during the PACE process, and can provide responses in relation to the following areas at each stage:

PACE ES2: Feasibility

- · Project brief, scope and history
- · Strategic site analysis; immediate and wider area
- Planning context
- · Public and key stakeholder engagement
- Feasibility studies
- · Drawings, including initial sketch diagrams

PACE ES3: Option Selection

- Overview of items above for PACE ES2
- · Detailed site analyses immediate and wider area
- Planning context
- · Options development and design iterations
- · Landscape & Visual Impact Assessment (LVIA)
- Capacity assessments
- Diversity Impact Assessment (DIA)
- · Sustainability targeting
- Drawings would typically include wider context plan, site plans, sketch plan, sections and/or visualisations

PACE ES4: Single Option Development (Approval in Principle)

- Overview of items above for PACE ES2, ES3
- · Public and key stakeholder engagement
- Design Development
- Outline Access & Maintenance Strategy
- Outline Material specifications
- Outline Fire Strategy
- Outline Security Strategy
- Drawing suite would typically include wider context plan, site plans, General Arrangement plans, any sections, elevations and visualisations

PACE ES5: Detailed Design (Approved for Construction)

- Overview of items above for PACE ES2, ES3 or ES4
- Design Detail
- Technical Approval
- CDM Risk Register
- Interdisciplinary Design Review/Interdisciplinary Design Check
- Drawing suite would typically include wider context plan, site plans, detailed plans, sections, elevations and visualisations

3.6 Review Day



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3.6.1 Attendees and Observers

Key members of the project team and stakeholders should attend Design Reviews. These would ideally include: Project Manager, Designated Project Engineer/Project Engineer, Network Rail Sponsor, Design Team, Design Champion, Design Manager, Network Rail Planner, Third Party funder, Client, Local Authority and/or Conservation Officer.

Attendance at Design Review meetings may also be a valuable source of Continuing Professional Development. They provide an opportunity for Network Rail staff, outside the project team, to familiarise themselves with the work of Network Rail's Design Advice Panel and develop their design knowledge. Attendance of observers should be agreed in advance with Design Council and the project team.

3.6.2 Site Visits

Wherever possible, a site visit should be arranged for Standard and Workshop Design Reviews. It is an opportunity to highlight spatial conditions, challenges and opportunities. All panel members are Advised to attend, alongside Design Council Staff. The project team should lead the site visit. Printed site plans for panel members are encouraged. Site visits typically last 45 to 60 minutes.

3.6.3 Review Meeting Agenda

A draft agenda for the Design Review meeting is circulated with the project team in advance at the Briefing Meeting and finalised one week prior to the meeting date.

Standard and Workshop Design Reviews meetings normally include the following steps:

- 1. Site visit; (45 to 60 minutes)
- 2. Briefing for panel members; (30 minutes)
 Design Council staff brief panel members in private before a review.
- 3. Presentation; (45-60 minutes)
 The project team are asked to present the proposal, identifying the key design aspects and challenges.
 Presentations typically last 45 minutes.
- 4. Clarifications/Stakeholder Comments; (30 minutes) Panel members ask questions to clarify any aspects of the proposal that are unclear. Other attendees are asked to provide comments on behalf of their stakeholder group.

- Panel Comments & Discussion; (60 120 minutes)
 Panel members offer strategic and detailed
 observations and advice. At workshops attendees
 will partake in the discussion. At the conclusion
 of the meeting, the chair summarises the panel
 advice.
- De-Briefing for panel members; (30 minutes)
 Design Council staff meet with the panel to confirm their views. No new observations will be introduced during this discussion.

For full-day meetings. Steps 2-5 will be repeated in the morning and afternoon for strategic and detail areas of the proposal.

3.7 Design Advice Panel Reports



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3.7.1 Design Advice Panel Reports

During the Design Review meeting, Design Council staff take comprehensive notes of the discussion and these form the basis of the Design Advice Panel (DAP) report. The report is written by Design Council staff and checked with the panel Chair. The reports are intended to be a comprehensive and articulate summary of Design Council's advice pertaining to the design proposal, and not simply minutes of the meeting.

The report covers the project's strategic challenges and opportunities as well as what is currently working successfully and advice as how to improve the areas that require further development.

Like the Review meeting, the Design Advice reports are intended to be constructive and transparent – to reflect and only cover fundamental comments made at the Design Review meeting. The report also summarises how the project is meeting and addressing Network Rail's Principles of Good Design (Fig 3.7). This strategic design check allows projects to proceed with confidence that a scheme has been properly reviewed prior to detailed design.

The DAP report is normally issued two weeks after the Design Review date and may be appended to Form D submissions to support sign off.

3.7.2 How the advice should be used

Design Review and the subsequent DAP reports are intended first and foremost as constructive tools for project teams to improve the design quality of their proposals. The process is formalised in the Engineering and Architectural Assurance Standard NR/L2/CIV/003 (clause 10) which advises that any requirements agreed between the DAP and the Project Sponsor/Manager should be incorporated into the project scope and support any Form D submission.

The reports may also be effectively used by any project to assist in strategic discussions and negotiations with local planning authorities, community and heritage groups, and other key stakeholders, providing assurance that a scheme has undergone a level of thorough independent assessment.

Finally, while different to pure engineering reviews DAP report outputs can and should be submitted as part of the Engineering Milestone Reviews (EMR) under NR/L2/P3M/201

3.7.3 Confidentiality

DAP reports are confidential and remain internal to Network Rail unless otherwise requested by the Project Sponsor or a FOI request.



Fig 3.7 Network Rail Principles of Good Design <u>Download</u>

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NOTE: The Design Advice report is normally issued two weeks after the Design Review

3.8 Costs, payment and cancellation



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3.8.1 Cost

Sponsors and Project Managers should be aware that while the Design Advice Panel has been set up to provide easily accessible design support, each project is responsible for the cost of its design review. It is therefore advisable to factor in the cost of reviews at an early stage of the project - ideally during development of the Project Remit Requirements.

The cost to a project should always be measured in terms of the expense saved through avoidance of abortive inefficient design, or misinterpretation and variation of requirements at later delivery stages.

The cost of design review services are provided on request from the Design Council, and will depend on the type of review advised:

Standard Design Review (full day)

Standard Design Review (half day)

Workshop Design Review (full day)

Workshop Design Review (half day)

Desktop Design Review (half day)

3.8.2 Payment

Internal NR projects / project teams:

To formally agree and proceed with a Design Advice Panel service, the Network Rail project will need to be issued with an invoice by Design Council. To begin this process Design Council will provide the project team with a 'Purchase Order Request Form' which will list the service details and price. The project team can use this form to generate an internal Purchase Order (PO) Number, which can then be shared with Design Council to provide an invoice to Network Rail. Fees are to be paid based on terms on the invoice.

External Third Party projects / project teams:

To formally agree and proceed with a Design Advice Panel review an external team should enter into a standard Design Council contract. The project team should sign the contract and provide an internal Purchase Order Number to be used by Design Council to generate an invoice.

3.8.3 Cancellation

Once the review date has been agreed in writing (and contract signed where relevant for external Project Manager/Sponsors) Network Rail Design Advice Panel services (including Design Review meetings) are subject to Design Council cancellation costs. Cancellation costs are the responsibility of the Project team.

The project team may cancel or postpone the Design Review by advising Design Council's Lead Programme Manager in charge of the meeting. The following conditions apply:

- A. 100% of Design Review cost: cancellation equal or less then 24 hours in advance of Design Review date.
- B. 75% of Design Review cost: cancellation more than 24 hours but less than or equal to one week prior to Design Review date.
- C. 50% of Design Review cost: cancellation more than one week but less than two weeks prior to Design Review date.
- D. 50% of Design Review cost: if the project description is not provided to Design Council five (5) business days before.

3.9 Built Environment Experts



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3.9.1 Design Council

Design Council is an independent charity and the government's advisor on design. In championing the use of design as a force for change the Council demonstrates the power of design, and how it impacts three key areas of the economy: business innovation, places, and public services.

They do this through commissioning pioneering, evidence-based research, developing ground-breaking programmes and using insights from these in their ongoing influencing and policy work. They are a trusted partner to public, private and third sector organisations in the UK and abroad, bringing together non designers and designers alike, and sharing with them their design expertise to transform the way organisations like Network Rail work.

3.9.2 Panel Members

Design Advice panellists will be chosen from Design Council's 400 Built Environment Experts (BEEs) from across the UK. Each Design Review panel is selected to bring together relevant design expertise, knowledge and mix of disciplines. At least one panel member, often the chair, will have suitable rail expertise.

3.9.3 Diversity and Inclusion

A core principle of Design Review is that it offers advice from a diverse range of experts with a broad spectrum of professional skills and experience. This is an important feature of the rounded, big-picture assessment it provides. Some projects may have to be reviewed by specialist panel members and this will be accommodated as necessary. Panels will reflect the diversity of the community that it serves and will be formed of people from a cross section of different genders, ethnicities, and ages.

3.9.4 Understanding of Local Context

Some panellists will have in-depth knowledge of the local context and others will have a national expertise, to bring a wide range of perspectives and assurance that a balance of views is on offer.

3.9.5 Panel Chair

All Design Review meetings will have an experienced and effective Chair who is responsible for managing the panel discussion and drawing a coherent conclusion for each presentation.

3.9.6 Conflicts of Interest

Recognising that those with rail expertise and working in the UK Rail industry will likely be working (or will have worked) with Network Rail in some capacity, Design Council will check conflicts of interest using the Conflicts of Interest Matrix for Strategic Projects and Organisations.

For further information on this matrix and conflicts of interest, please do not hesitate to contact a member of the Design Council team.

3.10 Contacting the DAP



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How to contact the Network Rail Design Advice Panel to arrange a design review:

The contact details on this page may be used to contact the Design Council's Architecture and Built Environment team (ABE) in order to discuss or schedule a Design Review with the Network Rail Design Advice Panel.

A Lead Programme Manager is typically appointed to manage the review and will be your key point of contact and briefing throughout the review process.







Email info@designcouncil.org.uk



Telephone +44 (0)207 420 5200





Design Advice Panel **Support & References**

4.1 NR Design Champions



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4.1.1 National Infrastructure Commission

The National Infrastructure Commission (NIC) has concluded that design should be embedded into the culture of infrastructure planning, to save money, reduce risk, add value, support environmental net gain and to create a legacy that looks good and works well. This is achieved by the government ensuring that all nationally significant infrastructure projects, including those authorised through any necessary hybrid parliamentary bills, have a board level design champion and use a design panel to maximise the value provided by the infrastructure.

Network Rail is dedicated to implementing this initative in several ways - through the development of our 10 Principles of Good Design, the work of our independent Design Advice Panel, and also the establishment of a National and Regional network of Design Champions supported by the Executive board and empowered by our National and Regional Programme Leads, including Engineering Services, Technical Authority and System Operator.

4.1.2 A Regional Network of NR Design Champions

Network Rail has a regional and national network of Design Champions within Route Engineering Services and Technical Authority who can be a point of contact for project teams and stakeholders looking to understand Network Rail's design aspirations and processes. They can encourage engagement with the independent Design Advice Panel across the organisation by working with and supporting project teams as they navigate the design assurance process.

Design Champions may also act as Architectural Reviewers for those involved in delivering significant new or modified architectural buildings and structures, operational buildings, and 3rd Party schemes that affect NR Property. They are able to provide advice and support to Project Managers, Sponsors, engineers and design consultants on how to meaningfully incorporate Network Rail's Principles of Good Design into a project.

NOTE: Architectural Reviewer is defined under NR/L2/CIV/003 and the role is assessed for competence under NR/L2/CIV/1000 Competence Management for Buildings and Civils Infrastructure. It is important for projects to assess the requirement for Architectural support/engagement at an early stage so that any programming and related costs can be factored in.

4.1.3 Who are NR Design Champions?

Design Champions are usually, although not exclusively, an internal NR time-based resource who may be contacted during key PACE Stages by project teams looking for support in achieving design assurance sign-off. They can also advise on the necessity and requirements of engaging with the Design Advice Panel (DAP). The extent and cost of this support is typically agreed and absorbed by each project in advance, on a project-by-project basis.

Design Champions are appointed because of their joint built environment design expertise and knowledge of NR and rail industry standards. Many are registered architects or building design specialists who, as Architectural Reviewers, possess the relevant competence to assure building compliance and accept submissions under NR/L2/CIV/1000 on behalf of Network Rail. This authority may also be delegated to a suitably external, independent, competent and qualified built environment professional.

NR/L2/CIV/1000

Competence Management for Buildings and Civils Infrastructure

4.2 Tips for DAP attendees

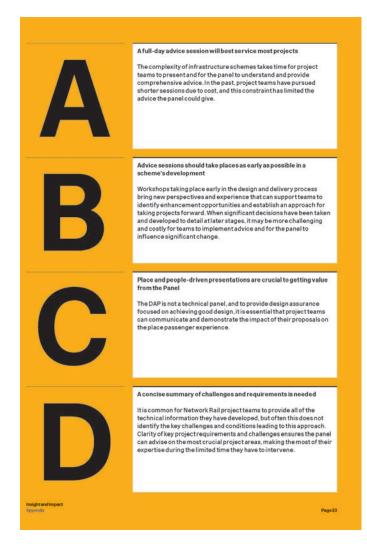


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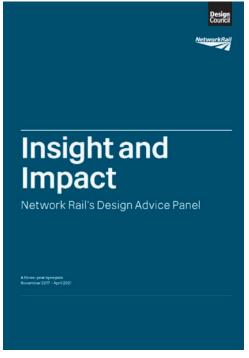
4.2 Lessons learned

Through the delivery of the Design Advice Panel services over several years and following feedback analysis, we have learned the following lessons that the panel will take on and may better benefit teams who attend a review session:

- · A full day session will best benefit most projects.
- Advice sessions should take place as early as possible in the development of any scheme, before any binding and ill-informed decisions have been made. This is where most impact and value will be gained.
- Place and people-driven presentations are crucial to getting value from the panel.
- A concise summary of the requirements and challenges is important in any presentation to the panel.







4.3 Design Services & Support



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4.3. Architectural Review & Design Support

Regional Design Champion activities may include:

- Architectural Reviewer (except where the Design Champion is a member of the design team).
- Providing a local regional, route based or national point of contact and support for Project Managers, Sponsors, design teams, engineers and consultants looking to achieve Network Rail design assurance
- Providing leadership, motivation and incentive to assure that regional and national business units embrace NR principles of good design.
- Reviewing and accepting a NR/L2/CIV/003 Form D submission on behalf of Network Rail, or identifying independent 3rd Party framework design support.
- Providing advice to project teams preparing for an independent design review with the Network Rail Design Advice Panel.

To request information on Design Support Services and Regional Design Champions listing contact:



Engineering Services

First contact Regional and National framework support services including scheme development, design, architectural review, engineering and project delivery resource and services.

Contact: sarah.plaxton@networkrail.co.uk samuel.parker@networkrail.co.uk



Tel: 08 549 683



Technical Authority - Buildings & Architecture

Managed Stations technical advice, standards, design and engineering guidance, innovation and research initatives...

Contact: Buildings & Architecture Team



Tel: 0207 557 8000

Other Contacts:

Regional Building Managers

Western & Wales

St Patricks House Cardiff CF10 5ZA DL-RAMBuildings@networkrail.co.uk

Eastern

York IECC York YO26 4XD DL-RAMBuildings@networkrail.co.uk

North West & Central

Manchester Square One Manchester M1 2NY DL-RAMBuildings@networkrail.co.uk

Southern

1 Puddle Dock London | EC4V 3DS DL-RAMBuildings@networkrail.co.uk

Scotland

St Vincent Street Glasgow G2 5NW DL-RAMBuildings@networkrail.co.uk

Support & References 4.4 Glossary



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ACRONYM

AFC Anticipated Final Cost (Built cost excluding permanent way, platforms & signalling works, and other non-building construction costs)

BEAP Built Environment Accessibility Pane CR-T Contract Requirements-Technical **CRD Contract Requirements Document**

Construction (Design and Management) Regulations 2015 CDM

DAP Design Advice Panel

EMR Engineering Milestone Review

MVP Minimum Viable Product - The most pared down proposition that can be delivered to meet the agreed outcomes specified by the client.

NIC National Infrastructure Commission

PACE Project Acceleration in a Controlled Environment

RRD Route Requirements Document

SPEED: Project SPEED for rail is focused on proposals that aim to significantly reduce the time and costs of project delivery

DEFINITION

Enhancement Scheme that changes network outputs, usually involving a new construction or asset

Refers to the consequences to society of a change in the level or quality of a service delivered. Outcome:

Promoter The organisation responsible for identifying the need for a project.

Update or replacement of an existing asset Renewal

SPEED: Project SPEED (Swift, Pragmatic, and Efficient Enhancement Delivery)

4.5 References & Acknowledgements



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Disclaimer

The following list is provided for reference only and is not exhaustive.

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

Network Rail Standards

NR/L2/CIV/003 Engineering and Architectural Assurance of Building and Engineering Works NR/L2/OHS/0047 Managing Health & Safety In Construction -Application of the Construction (Design & Management) Regulations NR/L2/ENV/015

Environment and Social Minimum Requirements for Projects -Design and Construction

NR/L2/P3M/201 Project Acceleration In A Controlled Environment (PACE)

NR/L2/P3M/005 Design & Construction Management in a High Street Environment NR/L2/CIV/1000 Competence Management for Buildings and Civils Infrastructure

Network Rail Guidance www.networkrail.co.uk/industry-and-commercial/supply-chain/existing-suppliers/buildings-and-architecture-

design-quidance/

Public Available Specification

PAS 8671: 2022 Built Environment - Framework for competence of individual Principal Designers

Other Documents

Our Principles of Good Design National Infrastructure Strategy Network Rail's vision document highlighting the 10 Principles leading to better design quality

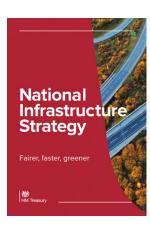
The NIC National Infrastructure Strategy sets out plans to transform UK infrastructure in order to level the country,

strengthen the Union and achieve net zero emissions by 2050.

Climate, People, Places & Value NIC Design Principles for National Infrastructure

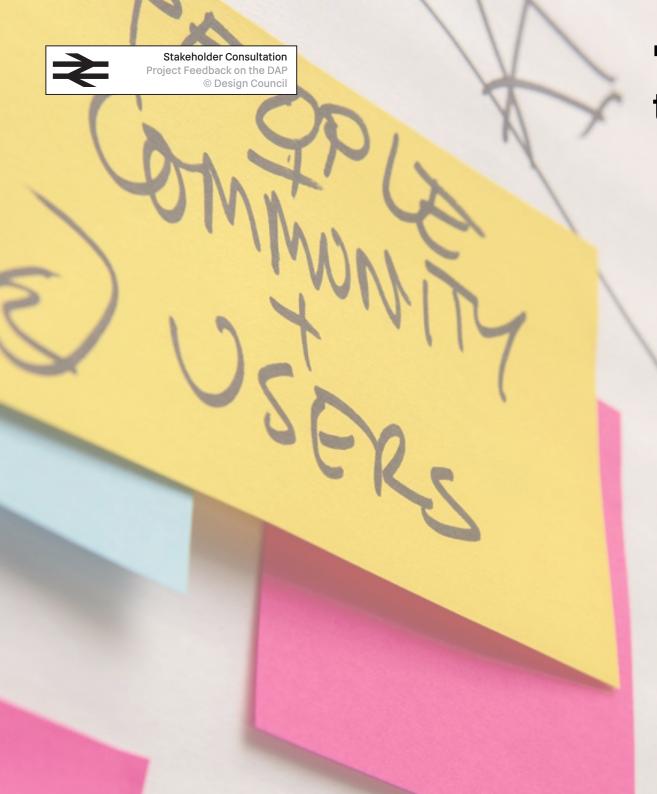












"People ignore design that ignores people"

Frank Chimero, Designer

"The review was probing and thorough, understood constraints and identified opportunities."

Sponsor

"The DAP was an enjoyable and hugely valuable process – and it has been a delight to see how the panel's feedback has started to embed itself in how the project team is taking the project forward."

Design team member

"The DAP played a key role in the project team subsequently revisiting the option selection criteria and progressing the option advised by the DAP as really putting passengers first."

Design Team member

"[The DAP] were really helpful and informative from the beginning of the process, which was great. I would recommend the pre-meeting discussion is held much earlier to agree on the agenda and allow time for the slide deck to be developed, then reviewed and then updated before submission."

Project Manager



100/

