Design Guidelines
NR/GN/CIV/200/10

Public Realm Design Guidance for Stations

Image 0.1
Bath Spa Station, Brunel Square forecourt public realm area. Passengers are encouraged to dwell by the seasonal planters that offer seating, these could be improved with armrests. Wayfinding is strategically placed offering clear direction to beyond the station to local destinations. Retail units spill out into the space activating the area. Artwork and natural stone paving draw inspiration from the local context.

Document Approval

Authorisation

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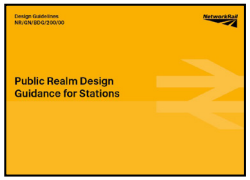
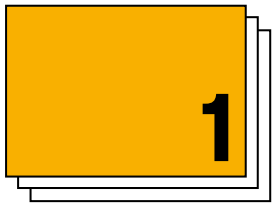
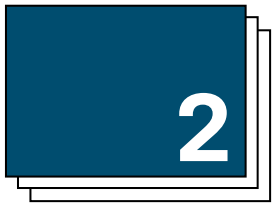


The Design Guidelines are contained in a single document divided over 4 sections:



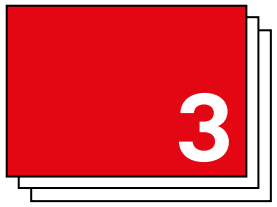
Section 1
Introduction, Principles and Vision

Provides a background for the need for public realm design guidance, the relationship to the principles and the vision for public realm.



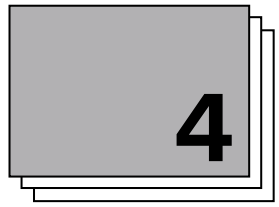
Section 2
Defining a Station Specific Brief

Sets out the process for project analysis and how to define a station specific brief.



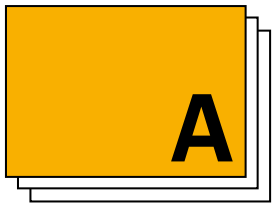
Section 3
Spatial Response

Guidance on how to spatially respond to a station specific vision.

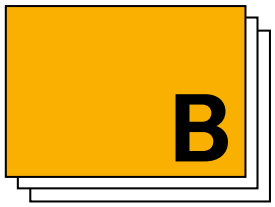


Section 4
Public Realm Elements

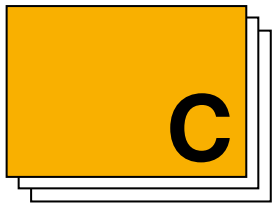
This section provides guidance on elements within the public realm. It provides a kit of parts that fit into the spatial response.



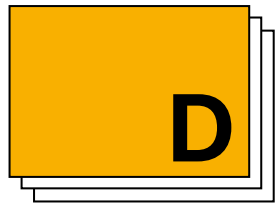
Appendix A
Case Studies



Appendix B
Station Classification



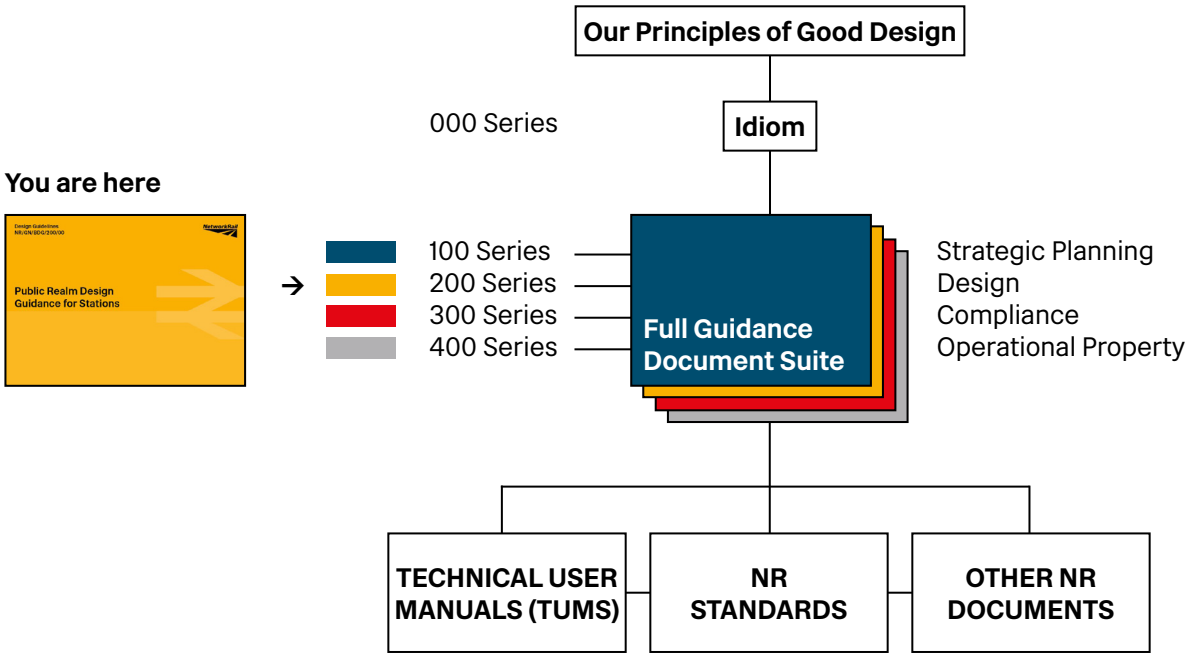
Appendix C
Glossary, Reference documents, Image Credits and Sustainability Performance



Appendix D
Public Realm Considerations Tool

How to use the guidance suite

The Network Rail Document Suite



References to other documents

- Code of Practice Guidance
- National Standard
- Network Rail document

Example:

Standards Reference

Design of an accessible and inclusive built environment — Code of Practice (2018)
BS 8300-1 and 2:2018

NR Guidance Suite Reference

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

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

Contents

Hint and tips:

To quickly navigate this document clink on any of the sections or titles on this page.

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

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Appendices

Image 0.2
Hackney Wick Station forecourt public realm showing a single clear accessible point of entrance. The space incorporates planters, cycle parking and has a sense of place drawing inspiration from the station's contextual setting of the River Lea

1

Public Realm Design Guidance for Stations

Purpose, Introduction, Principles and Vision

Image 1.1
Mural by Graft at Sea Mills Station, Bristol. Designed with input from the local community and celebrates the flora and fauna of the area, it is one of a number along the Severn Beach Line

1.1 Purpose and scope

1.1.1 Purpose

The Network Rail Public Realm Design Guidance is intended to provide a consistent approach to the design and quality of public realm across all stations.

1.1.2 Scope

All stations include some form of public realm including platforms, concourses and forecourts. The public realm provides the space for people to navigate the stations, access the railway line and utilise the facilities. The public realm is different across the rail network.

This guidance document sets out the aspirations and principles for all new public realm and public realm renovations or adaptions. The guidance refers to a range of Network Rail and external standards that can help the user with their project.

The intended audience for the Public Realm Design Guidelines are project design and delivery teams this may include;

- Asset Owner- Maintainer;
- Contractors/project delivery;
- Designers and architects;
- Developers;
- Engineers;
- Project managers;
- Project sponsors;
- Station managers/ Stations team
- Funders;
- Others involved in designing public realm for Network Rail.

As a public document, many more audiences are encouraged to read the guidance and share the ambition. These users may include;

- Local Authorities;
- Passengers;
- General Public;
- Transport operators - not just rail operators. Interface with other modes of transport
- Utilities Companies

1.2 Introduction

1.2.1 What is Public Realm?

Public realm can be described as the space between buildings which is freely and publicly accessible to all, including streets, squares, forecourts, parks and open spaces. This comprises primarily public land, although includes publicly accessible privately owned and managed land that is designed in such a way that it welcomes and encourages public movement into and through it.

For Network Rail the station environment and public realm extends well beyond just the entrance or the platform, it encompasses the forecourt, concourse and platforms as public realm. Many projects are part of wider improvement schemes and can therefore also consider or be affected by public realm beyond the station boundary.

The forecourt and concourse at station entrances are generally freely and publicly accessible, at gated stations with barriers the platforms are only accessible for those with tickets. However, these spaces should be designed in such a way that they welcome and encourage public movement through them and as such they are included within the Network Rail public realm guidance. The emergence of gateless barriers is likely to blur boundaries even more. The spaces beyond the station boundary often form part of the perceived station public realm regardless of ownership.

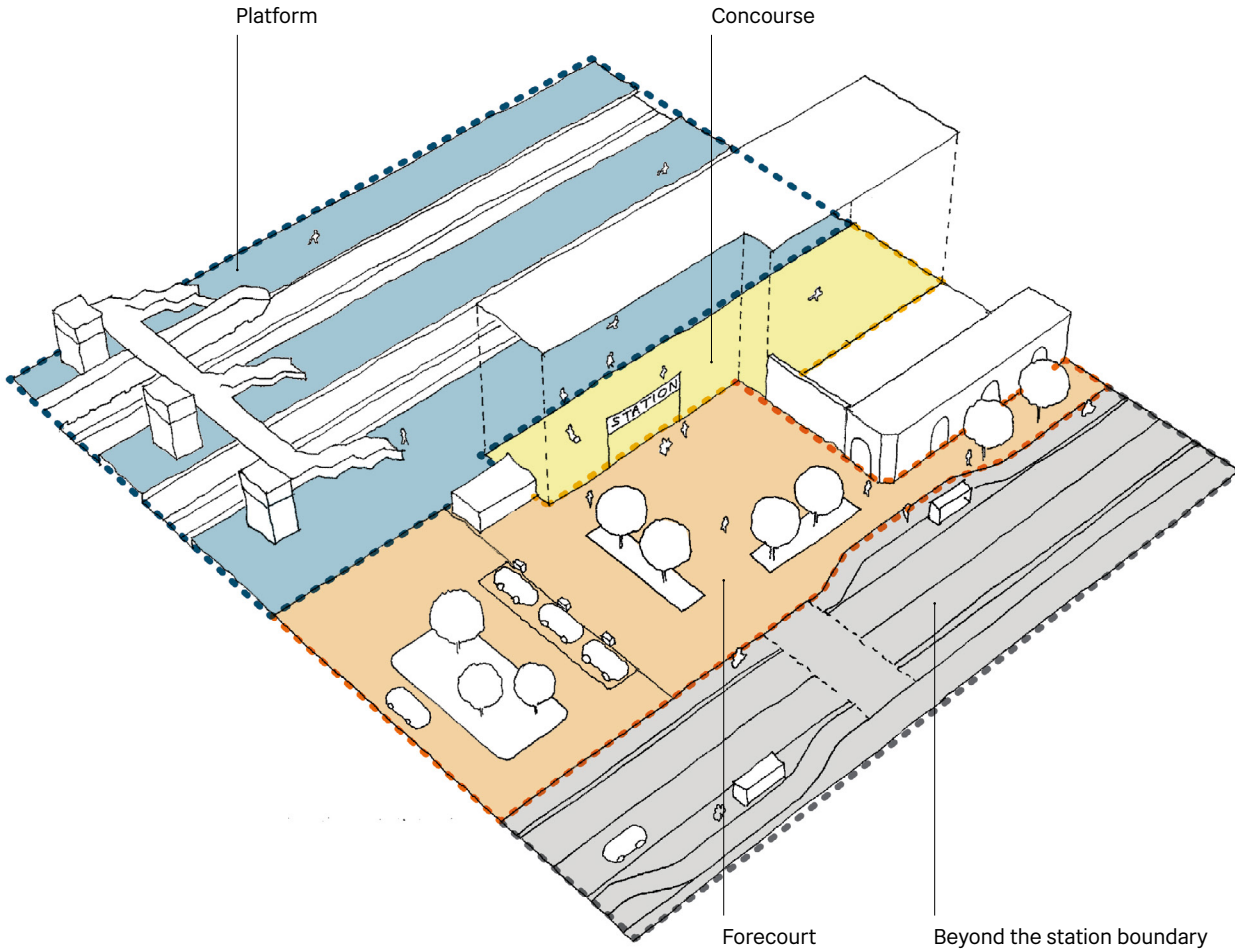


Image 1.2
Any town diagram highlighting the public realm areas

1.2.2 The Relationship of this document to other Network Rail Design Guidance

The Network Rail Design Guidance is a suite of documents that interconnect to each other. The Public Realm Guidance Manual overlaps with several other Network Rail guidance documents. The Station Design Guidance and Masterplanning at Stations as part of the 100 series (blue) will often come before or inform a project initially before the 200 series (gold) is considered.

Other documents in the 200 series provide additional guidance for specific topics such as Parking and Mobility at Stations and Materials and Finishes.

This guidance signposts the other relevant documents where appropriate. Documents in the 300 series (red) provide additional detailed information on certain topics.

1.2.3 How the guidance has been developed

The guidance has been developed and informed by a comprehensive evidence review of historic and emerging Network Rail guidance, design guidance created for other infrastructure bodies, Local and National Government and international design guidance examples (a full list can be found in Appendix C). The guidance is written to inform current projects, it looks to the future, to innovations and trends but provides relevant information to current projects.

Image 1.3
Relationship of the Public Realm at stations design guidance to other Network Rail Guidance Documents

1.3.1 Principles

Our Principles of Good Design, set out ten core principles which should be analysed, defined and responded to in the development of any Network Rail asset as part of a planned process. This guidance uses these principles and process and applies them to public realm to guide the approach to specific station projects.

Image 1.4
Network Rail Principles of Good Design document and symbols

1.3.2 A Planned process

The planned process using Our Principles of Good Design, helps enhance the quality of the assets we own by considering each project from a variety of different perspectives. To achieve this, the project team should analyse the existing context of the project before deciding on the requirements.

Our Core Principles and Public Realm Vision are overarching and apply to all stations, they should inform the initial analysis for all stations.

Analyse
The first stage should be to analyse and understand the public realm and its context. What is the existing context and situation?

Define
Once the analysis of the public realm and its context has been completed, the design team should define the station specific public realm brief.

Respond
The proposed scheme for the public realm can then be developed to respond to the brief.

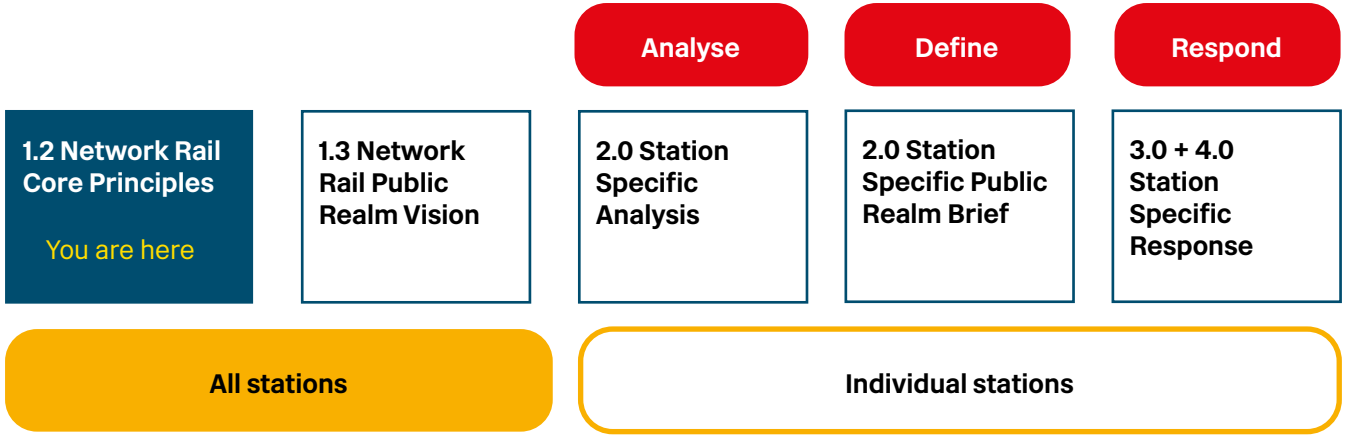


Image 1.5
Diagram illustrating the Planned Process

1.4 Public Realm Vision

1.4.1 Network Rail Public Realm Vision

The Public Realm Vision applies to all stations and public realm across the network. It is informed by the 10 Principles of Good Design and sets the Network Rail aspiration for public realm.

Public Realm Vision: Network Rail's stations enhance our identity as an organisation – they are the point of arrival and departure onto our network. From the platform to the forecourt and beyond the station boundary, the public realm creates the framework for activity and interaction that connects our world class network to the communities it serves.

We will create inclusive places that are rooted in their place, support the local economy and minimise our impact on the environment to improve the quality of life of our employees and passengers.

We will do this by working with place focused design teams, our asset managers and clients to ensure that all our stations are welcoming, inclusive and safe.

Image 1.6
Manchester Victoria Station, view over the platform public realm areas to the original Grade II Edwardian frontage which was revealed by the removal of a series of trainshed roofs and replaced by an ETFE-clad structure reducing the clutter of multiple column structures on platforms.

Public Realm Design Guidance for Stations

2

Station Specific Brief

Image 2.1
Glasgow Central Station.
Concourse public realm area with retail shops, seating areas and clear movement zones

2.1 A planned process and a station specific brief

2.1.1 Introduction

This section outlines how the planned process is applied to individual station public realm projects. It explains the process of analysing the station public realm and how this can be used to define a Station Specific Public Realm Brief.

2.1.2 Station Specific Brief purpose

Each station may have different needs, opportunities and challenges for the public realm, varying by size of station, local character, the needs of the local area, and the proximity to town/city centres. Defining a station specific public realm brief allows the Network Rail public realm vision to be tailored to certain stations.

A clear shared public realm brief can help define and steer a project from start to finish and provide a constant reference point throughout a project. It can guide what the public realm needs to achieve for an individual station. On some projects the public realm may be the only project being considered. On other projects public realm may be part of a larger Masterplanning exercise. Whatever your circumstances a public realm brief should enable the design or delivery team understand the balanced requirements of the project

2.1.3 The process

This process is intended to guide individual projects to reach a point where a station specific public realm brief can be defined.

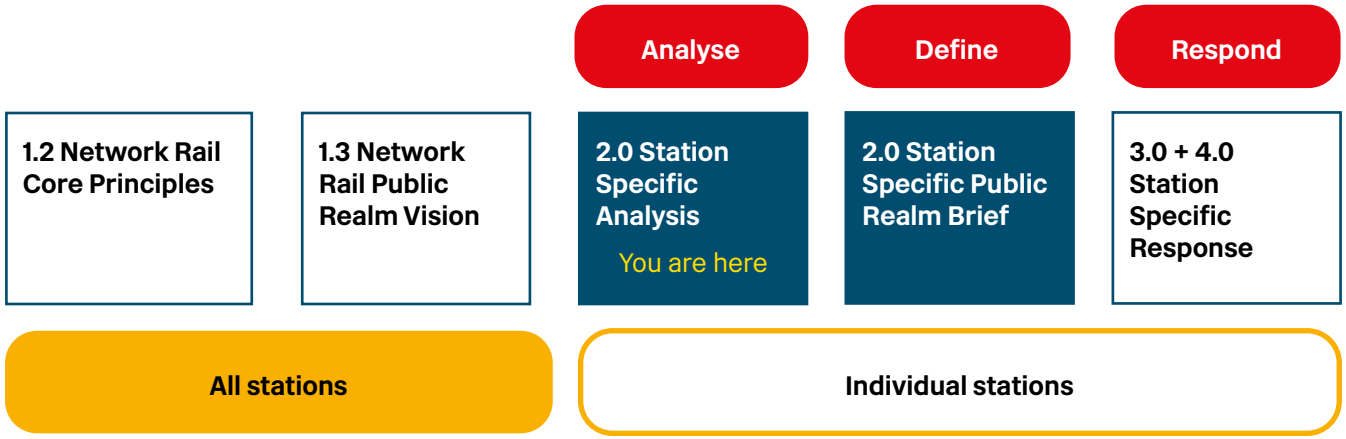


Image 2.2
Station specific brief process diagram

2.2 Process for Public Realm Design

2.2.1 Design team and stakeholders

Before a Station Specific Public Realm Brief can be defined it is important to have the correct people involved in the project (refer to Section 2.3). This consists of the appropriate design team with input from internal and external stakeholders (see Section 2.4).

2.2.2 Analyse

The analysis of the station public realm should be undertaken by the Design Team with input from stakeholders. This guidance includes the process of analysing the public realm using Considerations (refer to Section 2.5) to help prompt questions and analysis of all aspects of public realm from different perspectives. An optional tool for recording and visualising these considerations and priorities is explained in Section 2.6.

2.2.3 Define

Once the analysis of the public realm and its context has been completed, the information should be used to enable the design team to define the station specific public realm brief. This should involve stakeholders where appropriate in defining a shared brief. The defined brief should be collated and signed off by the client or project manager and shared with the project team and stakeholders.

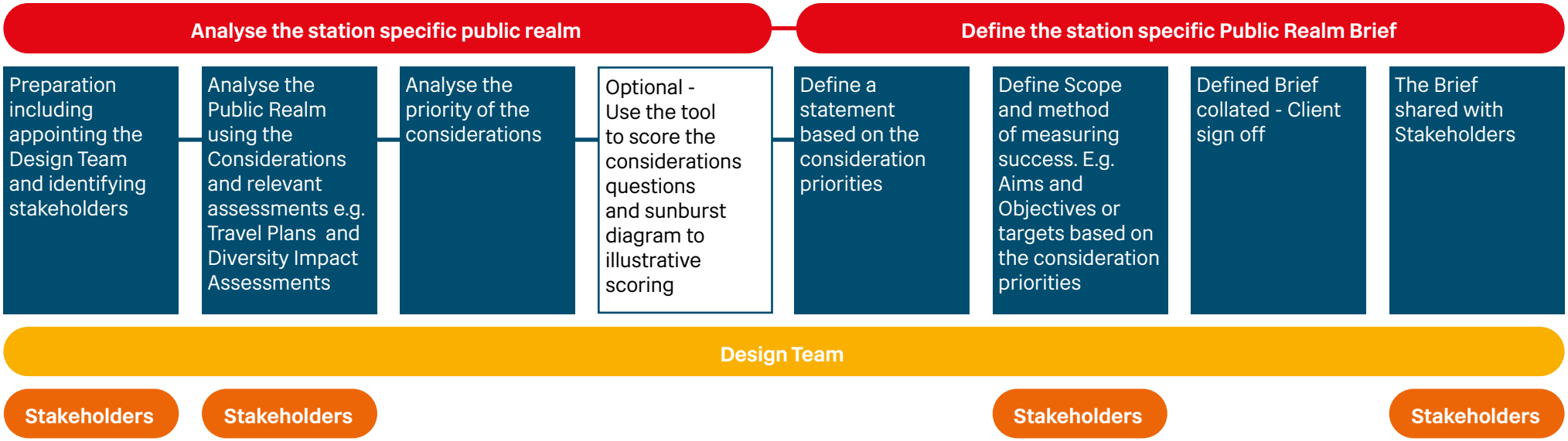


Image 2.3
Process diagram

2.3 Public Realm Design Team

2.3.1 Identify the design team and specialist consultant disciplines

The commissioning brief should identify the required disciplines and enable the right team to be appointed to deliver the project.

In the context of public realm commissions, there are core specialisms (design team consultants) usually appointed to deliver projects and additional or secondary skills/disciplines that may be involved dependant on the project requirements.

Core Public Realm Specialisms

- Landscape Architect
- Urban Design
- Town Planning
- Traffic and Movement Analysis (including Active Travel)
- Land, Property and Commercial, Economics and Risk/ Value Identification
- Security Specialist

Additional or secondary Public Realm skills/disciplines

- Project Management
- Access Consultant
- Structural, Civil and Highways Engineering
- Construction Management
- Cost Planning/Quantity Surveyor
- Property Market Analysis
- Urban Sociologist or Crime Consultants
- Consultation Specialists
- Environmental Specialist
- Heritage Consultants, Conservation and Listed Building Specialists
- Public Art Specialists
- Architects
- Lighting Specialists

Clear roles and responsibilities should be defined early on as some of the secondary skills might be expected from the lead consultant, for instance if no sub-consultant have been appointed to fill the role of project manager or engagement specialist.

Once the right disciplines have been identified, the client needs to select the right candidate using a fair and transparent procurement process. In most cases, the applicants can be expected to respond to the bid/tender with a programme, a resource and fees schedule as well as showing a good understanding of the project objectives and how to address them.

2.3.2 Public procurement routes

A number of options are available for procurement of the design team;

Design Contest: In an open Design Contest, designers submit their design solutions in response to the client's brief. The designs are assessed anonymously by a jury and in accordance with the published criteria. It is possible to add restrictions to a Design Contest, where designers initially submit details of their relevant experience and only those short-listed by the client are invited to submit design solutions for assessment by the evaluation panel. Prizes or payments can be awarded to the winner(s) of the Design Contest. The winner(s) will not necessarily be awarded a contract for the project.

Open procedure: A one stage process to award a contract to a designer to develop a design for a project. Open to all applicants who satisfy minimum standards.

Restricted procedure: A two stage procedure to award a contract to a designer to develop a design for the project. Designers are initially required to complete a standard Selection Questionnaire (SQ) which requires designers to set out their relevant experience amongst other selection criteria. Short-listed bidders are then required to respond to an Invitation to Tender (ITT) issued by the client, setting out their approach to developing a design.

2.4 Engagement for the Public Realm

2.4.1 Identifying Public Realm Stakeholders

Identification and mapping of stakeholders is an important first step in engagement. The more people who are involved in the mapping process, the more diverse the group of stakeholders that can be identified.

The list of stakeholders and appropriate methods of engagement and communication should be identified and documented in the Environment and Social Management Plans (ESMP).

Standards Reference

Environment and Social Minimum Requirements
NR/L2/ENV/015

Potential Stakeholders

- The Local Authority including Planning officers and Elected Members
- Businesses and retailers
- Statutory authorities
- The emergency services
- Heritage bodies
- Access groups
- Walking and Cycling groups
- Taxi drivers
- Transport operators including train, bus and tram
- Mobility operators and service providers
- Passengers

Think beyond the usual users of stations to those who may find the experience more difficult or may use stations in different ways. This might include disabled people, young children or people who come in just to use the facilities. By thinking more broadly about stakeholders, a more inclusive brief can be created.

Think about each stakeholders role in the project, at what point they may want to engage in the process and how they might be involved. There are many different ways to engage people from online surveys, to design workshops and simple walkabouts that might help to identify challenges and opportunities.

Think about people's journeys – ask them to explain their journey from home to destination or merely walking through the area. How do they interact with the station environment, how does it make them feel?

2.4.2 Create a Station Travel Plan.

Station Travel Plans are a tool designed to improve connectivity to and from a rail station, setting out a package of behavioural, operational and infrastructure measures to promote and facilitate effective access, with a focus on sustainable modes such as walking, cycling and public transport. Importantly, they also perform a much wider role in recognising the importance of a rail station in driving forward sustainable economic and community development, particularly in areas where there is forecast growth in the residential, employment and visitor markets.

Station Travel Plans provide a mechanism through which the activities of public and private stakeholders can be brought together to achieve these and other common goals, including:

- Increasing passenger satisfaction
- Delivering sustainable growth in rail patronage
- Supporting local and strategic plans for growth and economic development
- Adding value to work already carried out by community groups and
- Contributing to wider objectives around health, social equality and sustainable development.

However, stakeholders are engaged, the process should be transparent and be recorded as a key part of the design process to demonstrate the approach. It is key that the public realm is genuinely 'public', addressing diversity and enabling people to speak and communicate their views.

Standards Reference

National Asset Protection and Optimisation Delivery Framework (2018)
NR/L1/CIV/094

Diversity Impact Assessments (DIAs)

Developing Station Travel Plans
RSSB T803 Toolkit

2.5 Public Realm Considerations

2.5.1 The Six Considerations

Network Rail's principles of good design can be distilled into 6 key considerations that are relevant for analysing for the public realm. The context of each project will be different, and these considerations have been created to help balance the needs of a variety of users and influences.

- Passengers: Inclusion and Accessibility
- Environment: Green and Clean
- Placemaking: Sense of place
- Community: Socially engaging spaces
- Interchange: Inter-modal connections
- Commercial: Support the local economy

The considerations and questions are phrased so that they can be applied to existing station refurbishments as well as new stations.

They are designed as prompts to facilitate broad thinking about the station specific brief – but we have included a scoring and prioritisation tool to aid decision making if required. Crucially, each individual involved in the project may favour a different approach and we would recommend using the 6 considerations and the questions associated with each as a prompt for engagement. The discussion about how to balance each consideration or how to score them is as important to the design process as the final score if using the tool.

The balance of these considerations for the specific station should inform the station vision and requirements and drive all design decisions. The aim of analysing the Public Realm Considerations is to help a project team prioritise issues and opportunities and define a station specific brief for public realm. Engaging stakeholders at this initial stage can help understand which considerations are important. We have included a number of worked examples in to demonstrate how the tool can help to support the creation of a station specific brief.

In parallel, projects should also make use of the Environmental and Social Appraisal tool (ESA) to elicit and record opportunities for best practice in the built environment.

When public realm projects are part of integrated transport hubs working with others (for example Transport for London) it may require joined up thinking to agree variations to standards and varying requirements from different organisations. Agreeing a departure from standards may be required to achieve a better public realm outcome.

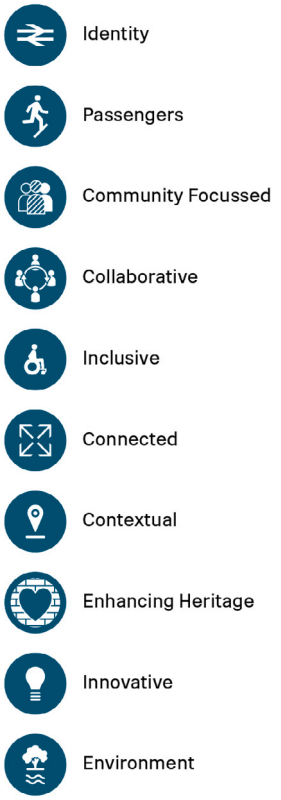
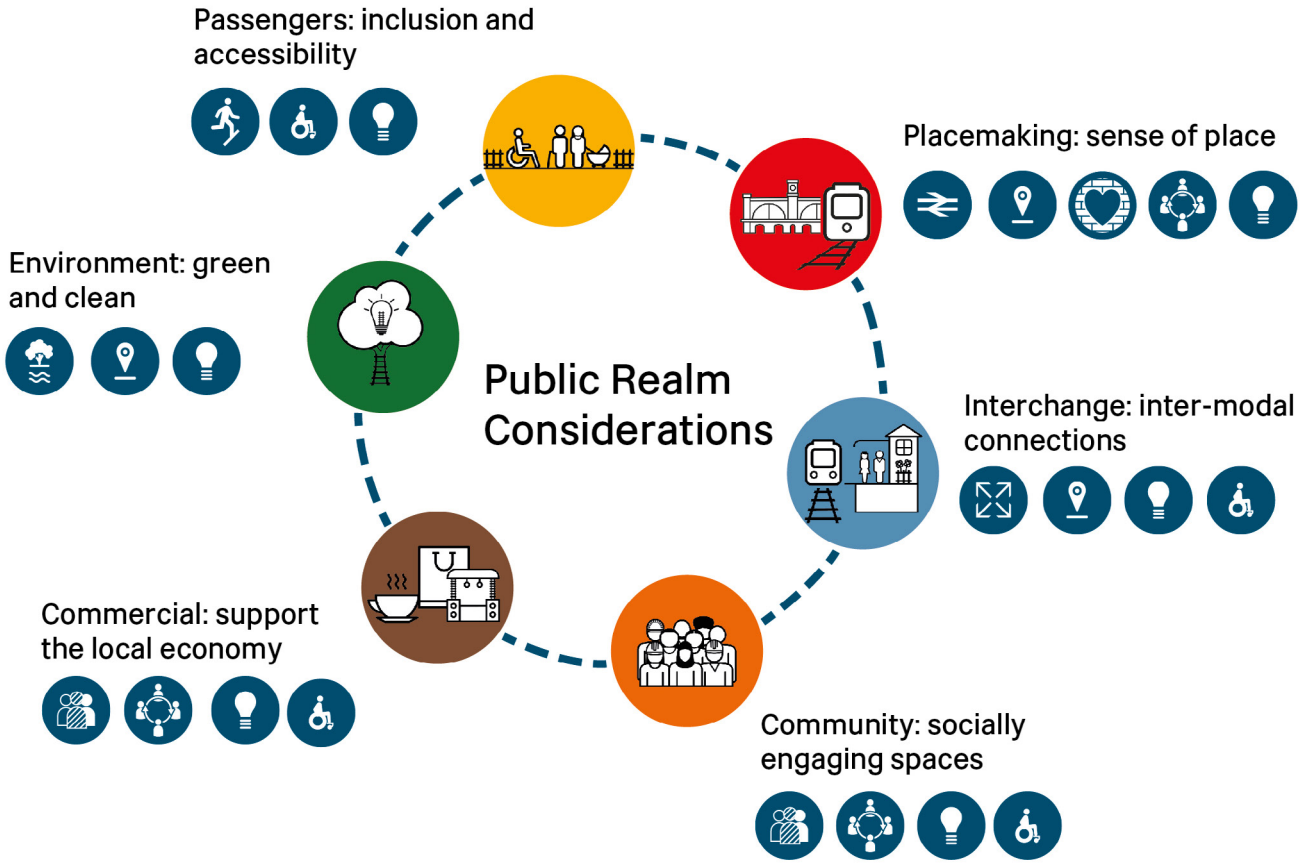


Image 2.4
Network Rail Principles of Good Design document and symbols

2.5 Public Realm Considerations



Passengers: Inclusion and accessibility
How can the Public Realm promote a positive, inclusive and accessible passenger experience?

Environment: Green and clean
How can the Public Realm support the vision to provide the greenest, cleanest mass transport system?

Placemaking: Sense of place
How can the Public Realm positively contribute to place making?

Community: Socially engaging spaces
How can the Public Realm help develop socially engaging spaces that unlock community benefit?

Interchange: Inter-modal connections
How can the public realm optimise the local operation of the transport system?

Commercial: Support the local economy
How can the Public Realm support the local economy and generate commercial revenue?

Image 2.5
Network Rail principles and Public Realm Considerations diagram

Passengers: Inclusion and Accessibility

2.5.2 Passengers Public Realm Consideration

How can the Public Realm promote a positive, inclusive and accessible passenger experience?

Network Rail should be seen as an exemplar organisation in terms of fully accessible public realm that considers all user groups and encourages diversity and inclusion. All passengers should feel safe and welcome. The quality and flexibility of public realm spaces at stations influences the passenger experience.

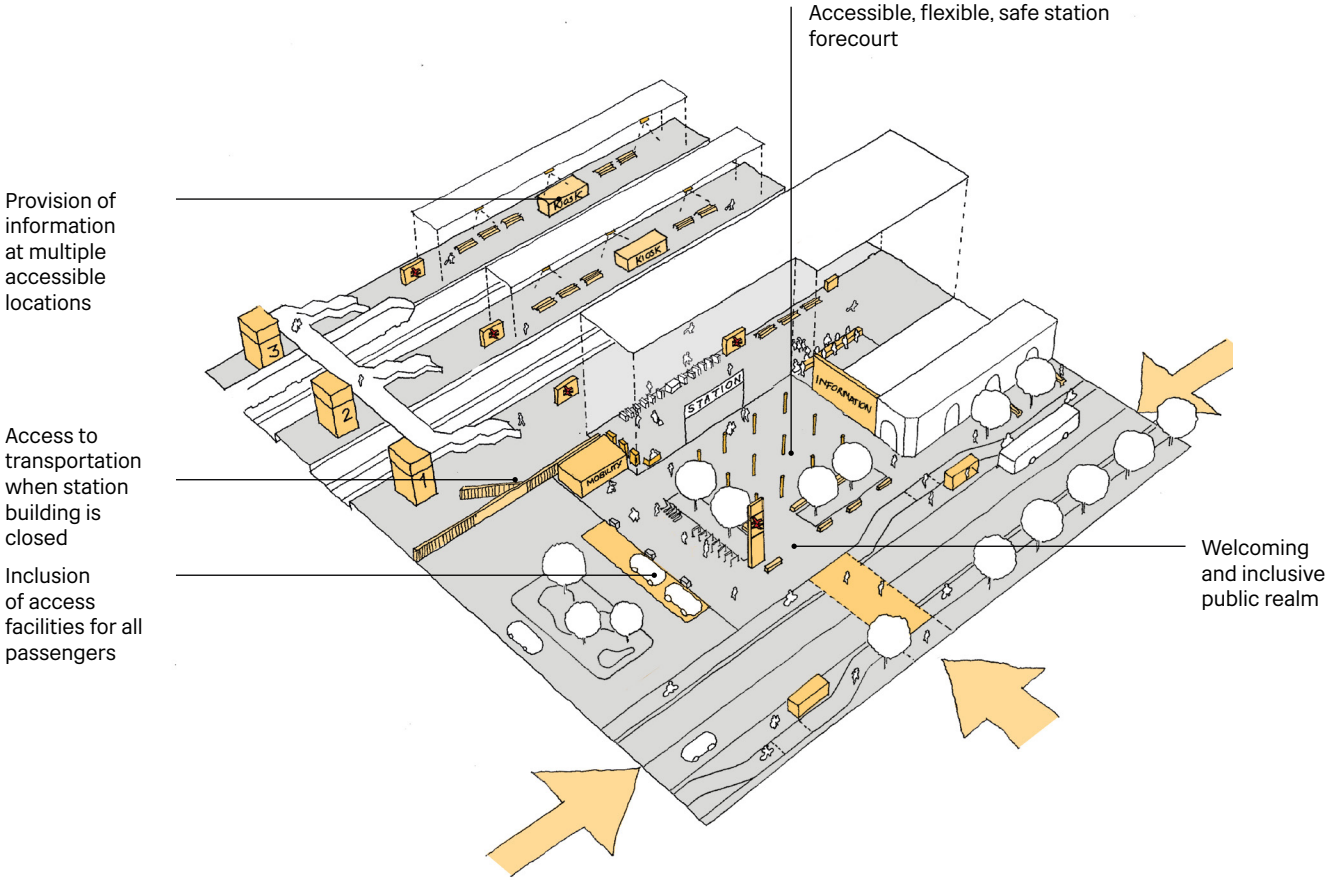


Image 2.6
Illustration showing accessible and inclusive environment on 3d diagram

Station Specific Brief
2.5 Public Realm Considerations

Passengers: Inclusion and Accessibility

1. Inclusivity
How can the public realm be inclusive for all? Has a Diversity Impact Assessment been undertaken? Does the public realm relate to NR Inclusive Design best practice?

Assess:
- Who will use the station?
- How can the public realm be easily usable and enjoyable for as many individuals as possible?

2. Accessibility
How can the public realm be as accessible as possible? Does the public realm relate to NR Inclusive Design best practice?

Assess:
- Are there any barriers to access that the public realm can be address?
- How is transportation accessed if the station building is closed?
- Are help points available especially where staff are not available?

3. Safety
How can the public realm make the whole community feel safe and welcomed? Can the public realm address any safety or security concerns?

Assess:
- Lighting levels within the station and immediate surroundings
- Intuitive wayfinding
- Overlooking of the public realm from the station and adjacent buildings
- Clear sight lines
- Safety and security of spaces for all

4. Quality of Experience
How can the public realm contribute to a positive passenger experience?

Assess:
- Quality of design and materiality
- Ease of maintenance to safeguard quality can be upheld
- Provision of information
- Ease of orientation within the public realm
- Avoiding clutter and obstructions
- Coordination of back of house facilities and infrastructure e.g. sub substation locations

5. Flexibility
How can the public realm adapt to differing passenger numbers so the station can accommodate passengers successfully?

Assess:
- How can the pedestrian experience be positive both at peak and off peak times?
- Can the public realm support future station capacity requirements and special events?

NR Guidance Suite Reference

Station Capacity Planning
NR/GN/CIV/100/03

Inclusive Design
NR/GN/CIV/300/04

Standards Reference

Diversity Impact Assessments (DIAs)

Environment: Green and Clean

2.5.3 Environment Public Realm Consideration

How can the Public Realm support the Network Rail

Environmental Sustainability Strategy vision to provide the greenest, cleanest mass transport system? How can it help deliver on the visions four core priorities

- A low-emission railway
- A reliable railway service that is resilient to climate change
- Improved biodiversity of plants and wildlife
- Minimal waste and sustainable use of materials

Network Rail is committed to reducing carbon emissions and minimising the consumption of natural resources. With an ambition to achieve net zero carbon emissions by 2050 (and 2045 in Scotland) and deliver continual improvements to air quality so that our passengers, neighbours, and employees breathe healthier air.

Good public realm design considers sustainability from the outset for the entire lifespan of the asset. The public realm should help people make green choices, making the sustainable travel option the most convenient and comfortable option through good design.

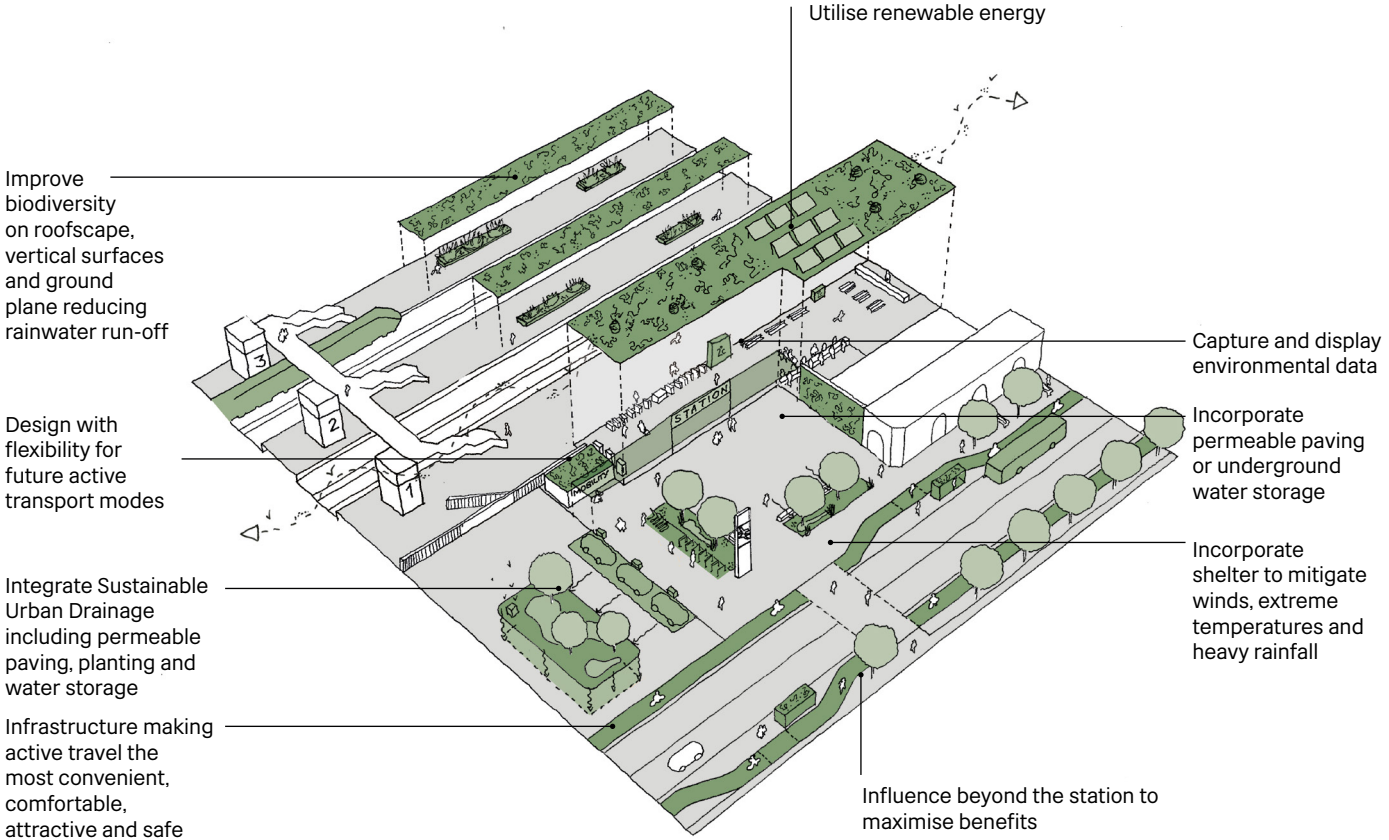


Image 2.7
Illustration showing green and clean environment considerations on 3d diagram

2.5 Public Realm Considerations

Environment: Green and Clean

1. Adapting to Climate Change
How can the public realm address the cause and effect of our changing climate?

Assess:
- Has an accredited sustainability target been set? CEEQUAL/BREEAM
- Previous local experience of extreme weather events such as, site flooding and heavy rainfall, high winds and extreme temperatures

2. Reducing Carbon
How can the public realm help reduce carbon usage?

Assess:
- Encouraging low carbon lifestyles with environments that make active travel the most convenient and comfortable
- Carbon considerations for materials choices using a recognised tool to assess the carbon impacts of decision-making
- What is the carbon footprint of the design?
- How is long term data capture used?
- How existing and proposed plant and tree species can offer carbon sequestration?

3. Enhancing Biodiversity
How can the public realm enhance biodiversity and nature recovery?

Assess:
NR Biodiversity Net Gain targets and Local Biodiversity Action Plan targets
Introducing nature-based solutions to as many aspects as possible
Providing resilient, self-sustaining planting
Providing habitats such as bug hotels or bird boxes on non-station assets
Existing natural value of undeveloped land
Opportunities for co-design or co-manage by community interest groups

4. Reducing Waste
How can the public realm contribute to reducing levels of waste?

Assess:
- Reduce waste throughout the life-cycle
- Designing for longevity
- Circular economy, recycling and re-use of materials or stored for future re-use
- Engaging communities to foster a sense of pride and care for the public realm
- How is long term data capture used?

5. Air Quality
How can the public realm contribute to improving air quality?

Assess:
- Is there an air quality improvement plan for all the station?
- Giving priority to low emission vehicles within station boundaries
- Pollution sources and opportunities for localised mitigation such as tree planting or vertical greening
- How is long term data capture used?

NR Guidance Suite Reference

Climate Action Design Manual for Buildings & Architecture
NR/GN/CIV/100/04

Standards Reference

Environmental and Social Minimum Requirements for Projects
NR/L2/ENV/015

Placemaking: Sense of Place

2.5.4 Passenger Public Realm Consideration

How can the Public Realm positively contribute to place making?

The railway station should reflect and enhance local identity. The station should always be a key civic place in every community it serves. The public realm should represent and reflect the character and quality of its place to promote ownership and identity whilst providing delight and a high quality experience for the user.

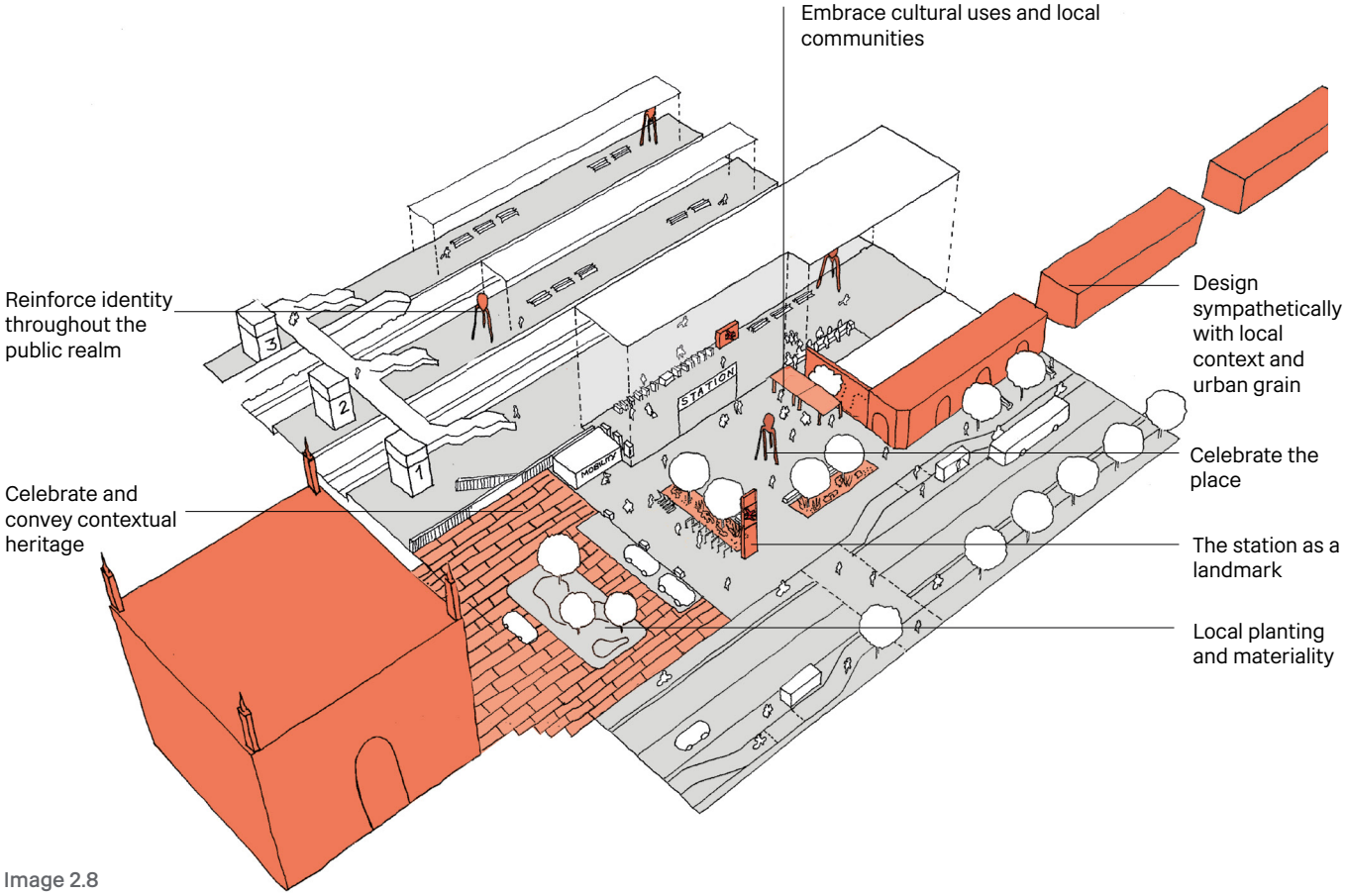


Image 2.8
Illustration showing placemaking considerations on 3d diagram

2.5 Public Realm Considerations

Placemaking: Sense of Place

1. Heritage
How can the public realm convey the heritage of the place and enhance the visual, physical and emotional relationship and enrich the narrative of railway assets for future generations?

Assess:
- The station's history and evolution
- The contextual setting of the station
- Heritage designations of the station and context

2. Cultural Identity
How can the public realm celebrate the cultural identity of the locality to improve the visual, physical and emotional relationship?

Assess:
- Local residential and business communities, and the socio-economic setting
- Cultural uses and local destinations
- The use of local materials and supply chains

3. Natural and Local Resources
How can the public realm use the natural and local resources to improve the visual, physical and emotional relationship?

Assess:
- Biodiversity enhancement
- Local materials
- Local geology

4. Local Context
How can the public realm represent its relationship to the local context?

Assess:
- Urban grain and form
- The station as a landmark
- Key views to and from the station

5. Network Rail Identity
How can the public realm convey the visual, physical and emotional relationship to Network Rail's identity?

Assess:
- Signage
- Delight
- Value for money
- High quality experience for the user
- Railway heritage
- Fleet Identity - does the station sit within a recognised suite of stations that were all built at the same time?

Standards Reference
Network Rail Principles of Good Design

Community: Socially engaging spaces

2.5.5 Passenger Public Realm Consideration

How can the Public Realm help develop socially engaging spaces that unlock community benefit?.

The station public realm offers an important resource to the community which it serves. The greatest benefit of the asset can be realised when multiple points of views are considered to build a successful environment which contributes positively to local community life.

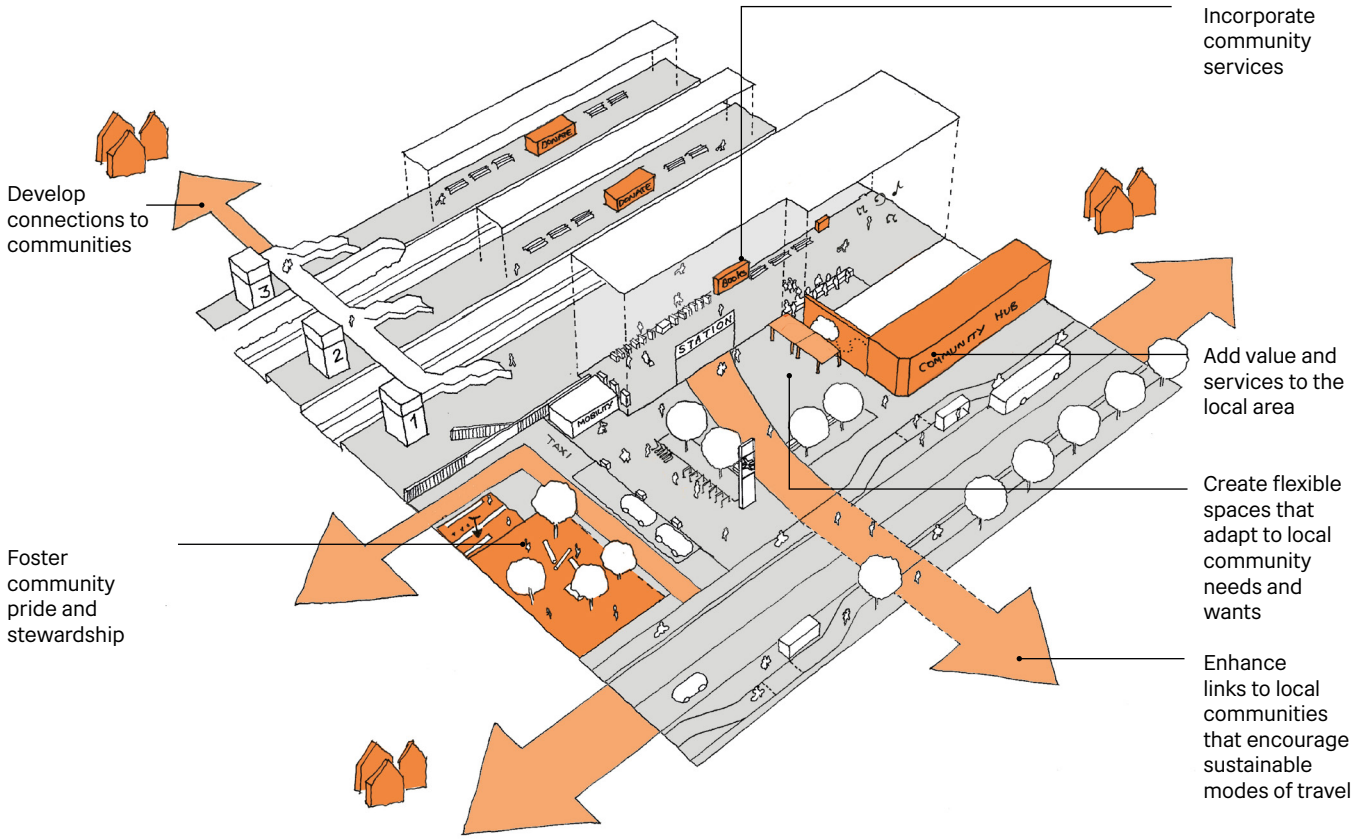


Image 2.9
Illustration showing community engagement and facilities considerations on 3d diagram

2.5 Public Realm Considerations

Community: Socially engaging spaces

1. Enabling Interaction
How can the public realm provide spaces where communities can interact?

Assess:
- Existing local community uses and services
- Diversity of existing and potential communities
- Flexibility of spaces and potential community uses that could be accommodated
- Encouraging a variety and mix of uses
- Dwell space and not just through space - places to sit and feel safe

2. Enhancing Well-being
How can the public realm enhance community well-being?

Assess:
- Enhance connections for the communities
- Routes that encourage walking or active travel
- Routes to community facilities

3. Contributing to Community Life
How can the public realm positively contribute to local community life?

Assess:
- Local community initiatives including stewardship and participation in maintaining elements of the station public realm
- Creating or enhancing community pride in the station environment
- Does the public realm add value to the local area

4. Adaptability
How can the public realm adapt to changing uses?

Assess:
- Is there scope to successfully enable future community uses and innovation?
- Future community demographic change
- Current and future local development proposals and Planning Policy

5. Consultation
How can stakeholder consultation be considered in the development of the public realm?

Assess:
- Is there scope to improve dialogue and stakeholder investment to develop mutually beneficial ideas for the public realm?
- Who will be consulted?
- How will they be consulted?
- How consultation will best serve the local community?

Standards Reference

Environmental and Social Minimum Requirements for Projects
NR/L2/ENV/015

Interchange: Inter-modal Connections

2.5.6 Interchange Public Realm Consideration

How can the public realm optimise the local operation of the transport system?

The successful operation of a railway station often relies on interaction with other modes of transport and the prioritisation and spatial arrangement of access.

The public realm provides an important role in both connecting and separating transport infrastructure. The public realm should aim to simplify journeys and improve transport interfaces by integrating public transport, active transport, and shared transport.

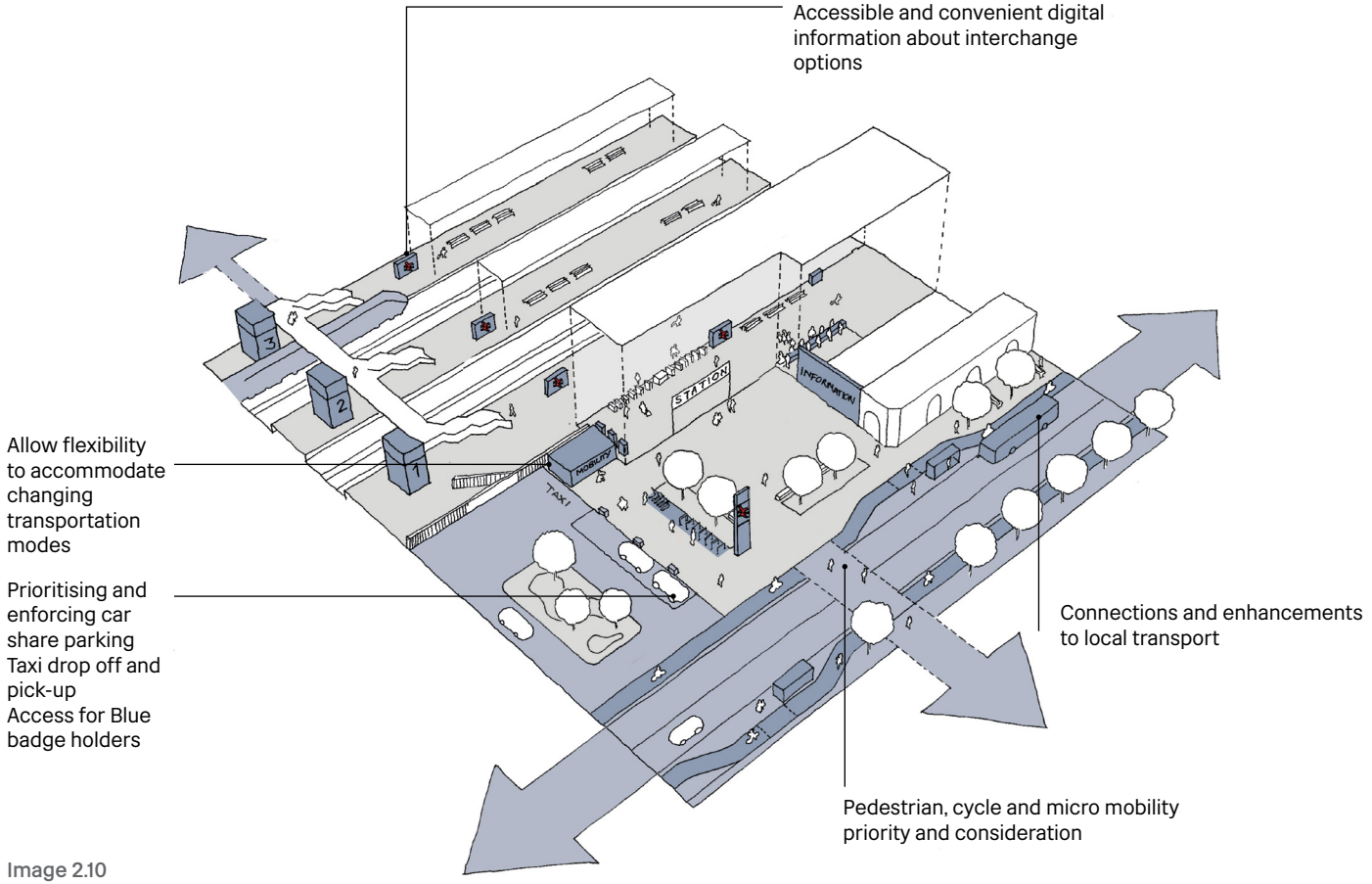


Image 2.10
Illustration showing modes of transport considerations on 3d diagram

2.5 Public Realm Considerations

Interchange: Inter-modal Connections

1. Pedestrian Experience
How can the public realm be easy, comfortable and safe as an interchange experience for all pedestrians?

Assess:
- Movement hierarchy
- Location and clarity of signage
- Clear routes into the buildings and platforms
- Level changes
- Lighting and sense of safety

2. Modes of Public Transport
How can the public realm be safe, legible and comfortable as a public transport interchange for all, at the same time as enhancing and activating the public realm?

Assess:
- Movement hierarchy
- Local existing modes of transport
- Future possible transport modes
- Opportunities for development of a Mobility hub to bring together transport modes.
- Transport facilities e.g. lockers
- Physical and digital branding, identification and signage showing transport options available, in the station, outside of it, digitally and online

3. Emergency and Delivery Vehicles
How can emergency and delivery vehicles access the station safely?

Assess:
- Emergency access routes and protocols
- Delivery routes and management
- Safety and legibility

4. Cycle / Scooter Experience
How can the public realm create a safe, legible and comfortable cycle / scooter experience?

Assess:
- Movement hierarchy
- How easy, quick and safe is it to park your cycle/ scooter?
- How easy is it to take your cycle/ scooter on the train?
- Are there cycle/ scooter hire facilities? Consider docked and undocked cycles as well as cycle lockers
- Can cycle taxis (cargo bike) access and use the station?
- Are there spaces for larger cycles (tandems and tricycles, bike trailers)?
- How can cycle /scooter parking and facilities avoid creating clutter in the public realm?

5. Shared and Private Vehicle Experience
How can the public realm rationalise traditional private vehicle usage in favour of more sustainable modes of transport whilst still providing for or those that require it?

Assess:
- Movement hierarchy
- Access for Blue badge holders
- Priorities / efficiencies of land use
- Prioritising and enforcing car share parking for car club and/or ride share
- Encouraging shared vehicle use through parking charges
- Introducing and prioritising charging points
- Ease of pick up / drop off points including taxis with opportunities for shared journeys
- Current and predicted future parking demand
- Motorcycles
- Micro-transit
- Wide parking bays
- Avoiding clutter

NR Guidance Suite Reference

Parking & Mobility at Stations
NR/GN/CIV/200/11

Commercial: Supporting the Local Economy

2.5.7 Commercial Public Realm Consideration

How can the Public Realm support the local economy and generate commercial revenue?

The station public realm offers opportunities for commercial activity both in the design and construction of the asset and during the ongoing life of the station. The public realm can stimulate the local economy and at the same time provide revenue streams for Network Rail.

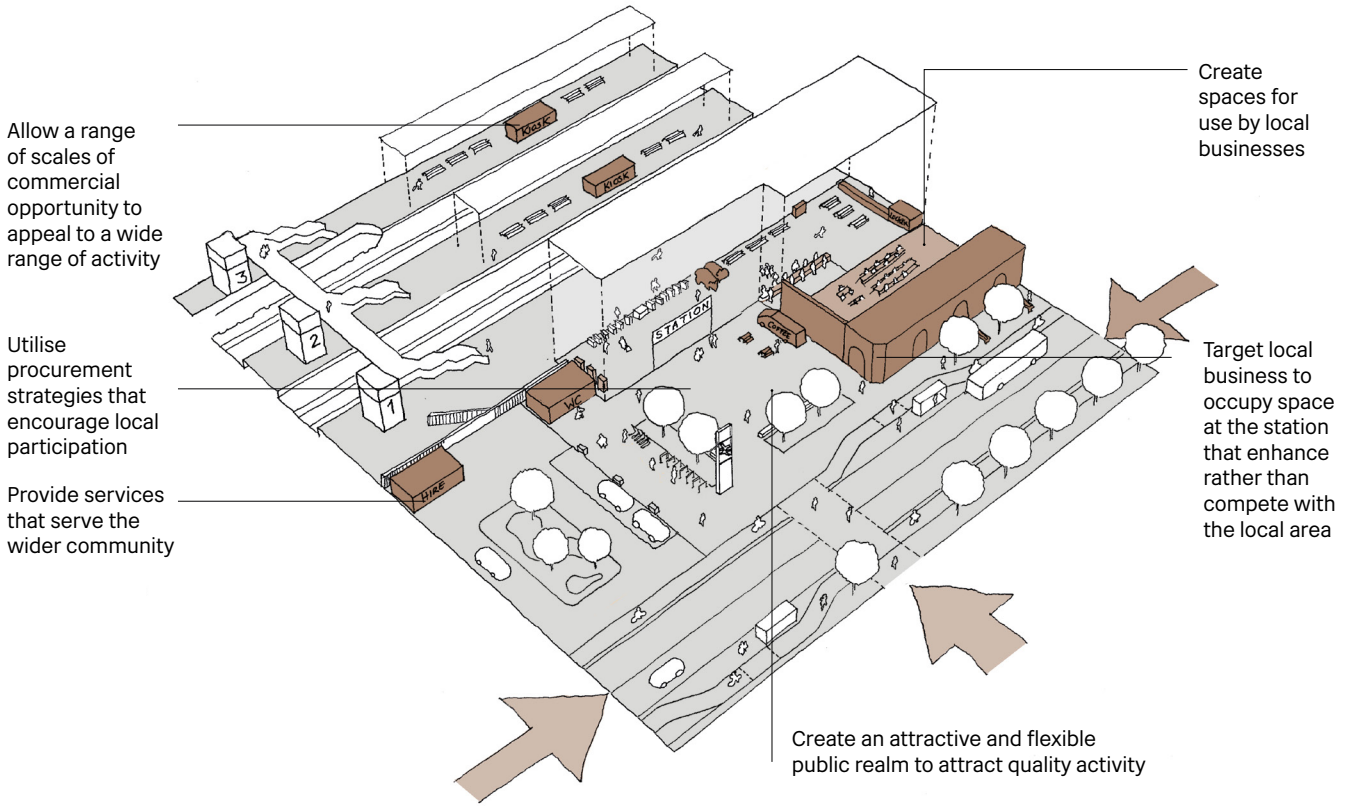


Image 2.11
Illustration showing commercial opportunities considerations on 3d diagram

2.5 Public Realm Considerations

Commercial: Supporting the Local Economy

1. **Generating Interest and Attracting Tenants**
   How can the public realm improve commercial opportunities by providing uses to generate interest and attract tenants?

   Assess:
   - Feasibility of commercial opportunities and foot fall
   - Opportunities for cafe, food and beverage offers and any licensing, delivery implications
   - Potential for meanwhile uses and lessons learned from previous experience
   - External space for tenants
   - Shared uses such as toilets
   - Benefits of uses such as passive surveillance
   - Flexibility and adaptability

2. **Event Infrastructure**
   How successful is the public realm in providing event infrastructure? Is there scope to further enable temporary, pop up and low investment events?

   Assess:
   - Pop up power
   - Events programming of spaces

3. **Stimulating the Local Economy**
   How can the public realm stimulate the local economy by forging links with the local community to encourage investment and provide support?

   Assess:
   - Procurement strategies that encourage local participation to stimulate the local economy such as local contractors, artists, and craftspeople.
   - Targeting of local businesses to occupy permanent or temporary spaces with the public realm

4. **Local Relationships or Partnerships**
   How can the public realm improve or create relationships or partnerships with local retail or local authority facilities?

   Assess:
   - The impact of a commercial offer within the local economy

5. **Social Capital**
   How can the public realm facilitate social capital or to develop this further?

   Assess:
   - Opportunities for relationship building with the local community
   - Shared ideas and value – creating ideas through an engagement process
   - Providing opportunities for voluntary, community and social enterprises (VCSE) and mutuals

2.6.1 The Considerations Tool

As a way of recording responses to the public realm considerations and prioritising requirements, a tool is included in the appendix. The tool consists of a scoring table and a sunburst diagram that graphically represents the results.

The tool has been developed to inform and guide design decisions to define a Brief. It is not a tool that provides a definitive answer, it instead provides a way of recording the priority or relevance of each consideration.

It is subjective and should be used by a design team with a holistic overview of a project. Ideally within a consultation exercise so that each question is discussed. Balancing the priorities of a project and being able to communicate how this has been achieved can be useful to communicate with stakeholders. The tool and diagram can be used to help underpin the Station Specific Public Realm Brief.

2.6.2 The scoring table

The scoring table is based on scoring the priority of each question within the considerations. Each question is listed and a priority score from 0-4 can be assigned to it. The total of the scores from each question can be added up to get a total score for each Consideration.

Passengers

Inclusion and accessibility:
How can the Public Realm promote a positive, inclusive and accessible passenger experience?

		Balancing the Priorities				
		Not relevant	Yes: Low Potential	Yes: Medium Potential	Yes: High Potential	Yes: Important Priority
		0	1	2	3	4
1	**Inclusivity** How can the public realm be inclusive for all? Has a Diversity Impact Assessment been undertaken? Does the public realm relate to NR Inclusive Design best practice?					
2	**Accessibility** How can the public realm be as accessible as possible? Does the public realm relate to NR Inclusive Design best practice?					
3	**Safety** How can the public realm make people feel safe and welcomed? Can the public realm address any safety or security concerns?					
4	**Quality of Experience** How can the public realm contribute to a positive passenger experience?					
5	**Flexibility** How can the public realm adapt to differing passenger numbers so the station can accommodate passengers successfully?					
	TOTAL					

Image 2.12
Extract of the blank version of the Scoring Table as part of the Considerations Tool in Appendix D

2.6.3 Sunburst diagram

The sunburst diagram can then be used to provide a graphic representation of the outcome of the process. The sunburst diagram works by:

- Each segment of the diagram relates to a consideration and is colour coded.
- There are 20 rings which correspond to the maximum score a consideration can have (5 questions, max score of 4 points = 20)
- The rings in each segment can be filled in based on the score that has been agreed in the table.

The Considerations that are filled in furthest out on the sunburst are the ones that should be given more priority within the vision.

The tool can be printed and filled out manually to create a visual reference for the brief. This is especially useful if developing it as part of an engagement exercise. An automated version which can produce a sunburst diagram automatically using excel has also been developed.

2.6.4 Application of the tool

The tool can be used for all scales of station and all types of project, from small scale improvement to the design of new stations. Examples of the tool, illustrating three scenarios are set out in Appendix D which also contains the worksheets for completing the tool.

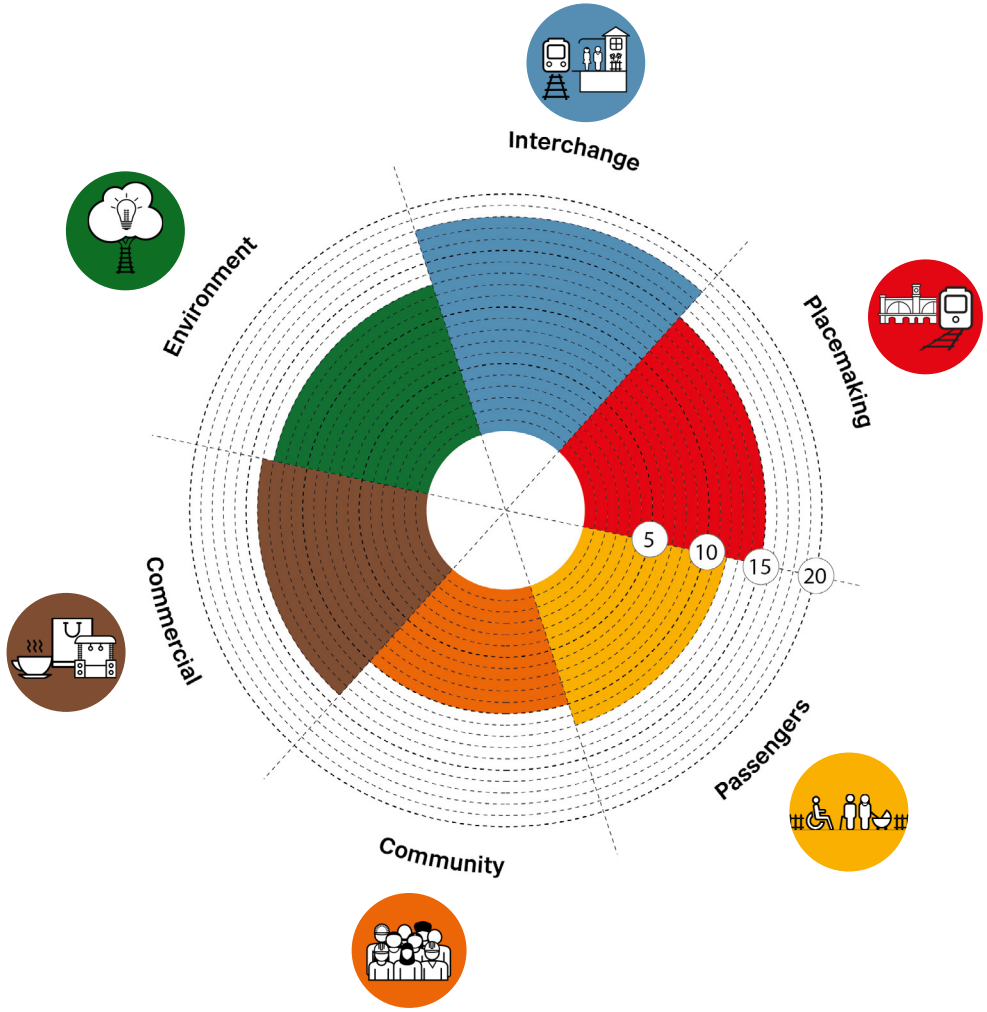


Image 2.13
Example version of the Sunburst Diagram that can be used as part of the Considerations Tool

2.7.1 (Re) defining the brief

The analysis of the 6 considerations and the balancing of these priorities should result in a clear brief for the public realm. This may be a standalone public realm project, part of a wider station design or a smaller intervention or renovation.

It is important that the whole team and stakeholders are engaged and agree to the brief.

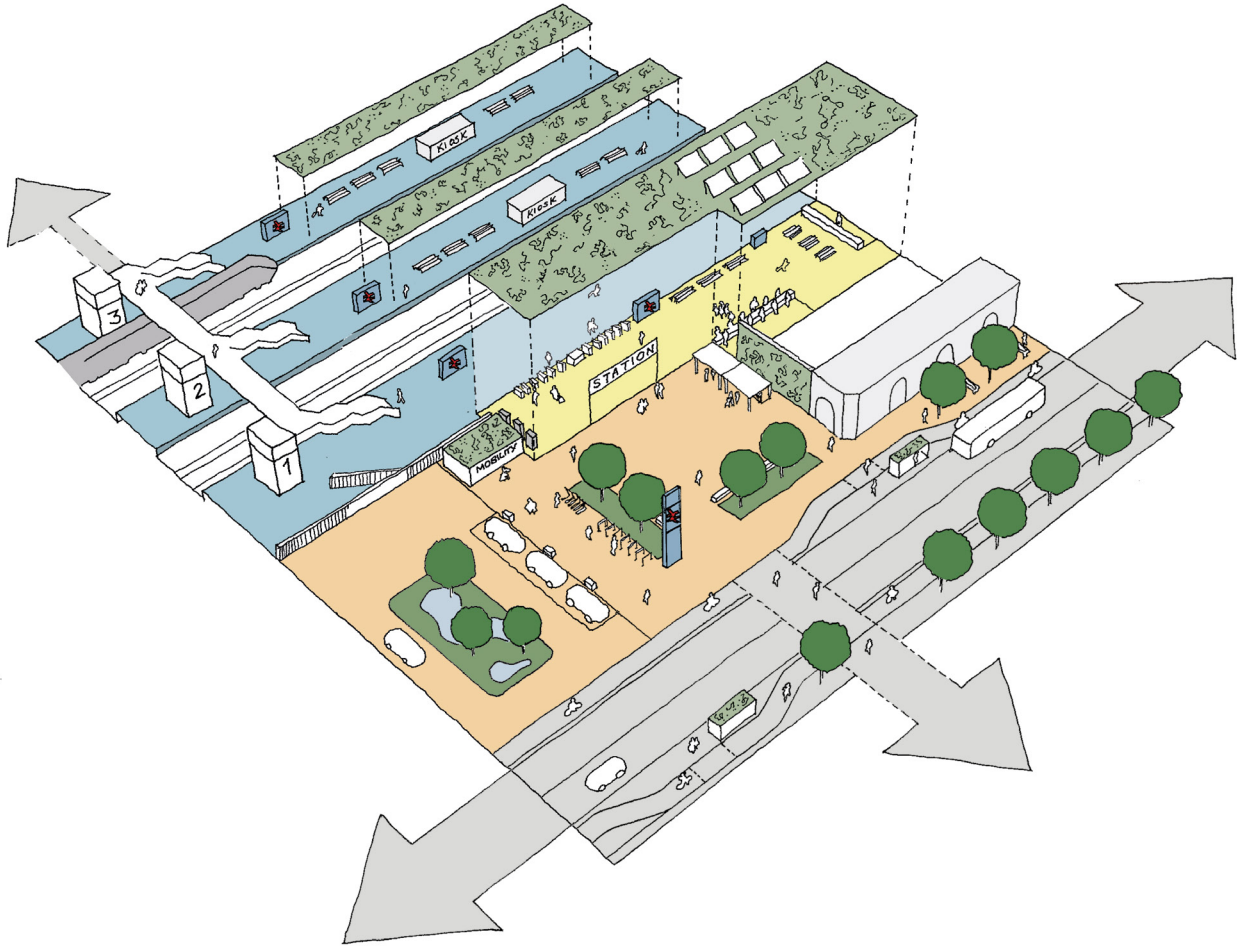


Image 2.14
(Re) defining the brief

2.8 Review and Assurance Process

2.8.1 Design review

The independent Network Rail Design Advice Panel (DAP) supports Network Rail (NR) in prioritising and embedding design quality across the organisation. It does this, in part, by confirming all applicable NR built projects are of a high design quality, and are optimising the scheme's potential. It achieves this through the Design Advice Panel's key service, which is design review. The Design Advice Panel's remit is to focus on the design impact of projects, and is not related to other Network Rail panels such as the Built Environment Accessibility Panel.

The DAP and Design Reviews are run by the Design Council and projects suitable for review can be identified by the DAP Threshold Matrix Tool, which can be found in Design Advice Panel Design Manual NR/GN/CIV/100/01

2.8.2 Form D NR/L2/CIV/003

Form D is an assurance process for Architecture and Layout. It is focussed on Architecture but is the most relevant Form to cover Public Realm projects. Form A, B and C relate to highways and engineering. Form A is the primary assurance for Hostile Vehicle Mitigation (HVM) measures and will require sign of by the Security Specialist.

The form is required to be submitted at design stages throughout the project. It includes a series of questions that the design team provide a response to, showing how the project has responded. This can be structured around a clear brief and design principles from following this guidance.

The Form D should be collated by the Project Manager with input from the Design team, this includes multidisciplinary input from all consultants for example landscape architects, lighting designers and wayfinding consultants.

Once the Form D has been submitted, the process may involve a presentation to Network Rail which should be themed around the criteria in the Form D. Feedback will be given with a comment review sheet that the Design Team will be required to respond to. This will say whether comments have been addressed now or will be dealt with at the next stage.

The project brief should include the requirement for a Form D. Time should be allowed for within the project programme to prepare, submit, present and respond to comments.

For projects which trigger the Threshold Matrix Tool, design review may be a condition for Form D sign off. NR/L2/CIV/003 also stipulates that Form D is submitted at Single Option stage and / or to support a Planning Submission. With subsequent submissions at Approval in Principle and Detailed Design, to reflect the design lifecycle.

The PACE Framework replaces GRIP. The five PACE phases and their relationship to GRIP are shown in Masterplanning at Stations NR/GN/CIV/100/07.

NR Guidance Suite Reference

Design Advice Panel Project Guidance
NR/GN/CIV/100/01

Masterplanning at Stations
NR/GN/CIV/100/07

Standards Reference

Architectural and Layout Acceptance
NR/L2/CIV/003/

Environmental and Social Minimum Requirements
NR/L2/ENV/015

Project Acceleration in a Controlled Environment (PACE)
NR/L2/P3M/201

Image 2.15
Sheffield Station forecourt public realm providing a welcome arrival square including a steel sculpture celebrating salmon's return to the River Don by artist Jason Heppenstall, made from 1,500 spoons and other old local steel

3

Public Realm Design Guidance for Stations

Spatial Response

Image 3.1
Edinburgh Waverley Station concourse showing seating, waiting area and retail units under the impressive historic roof

3.1 Spatial Response Introduction

3.1.1 Introduction

This section sets out how to apply the design considerations spatially within the station public realm.

The most successful stations balance ease of movement and access with a series of activity zones that enable people to meet, interact and operate the station. Getting the balance right is important to delivering an inclusive and safe public realm.

This section sets out the different Movement zones and how they create the framework around which, activity zones can be arranged.

This section also looks at the areas of public realm of the station: Platforms, concourse, forecourt and beyond the station, and looks at which zones are appropriate for each area.

Network Rail's station types are then assessed to guide how the zones could work for stations of varying scales, functions and locations.

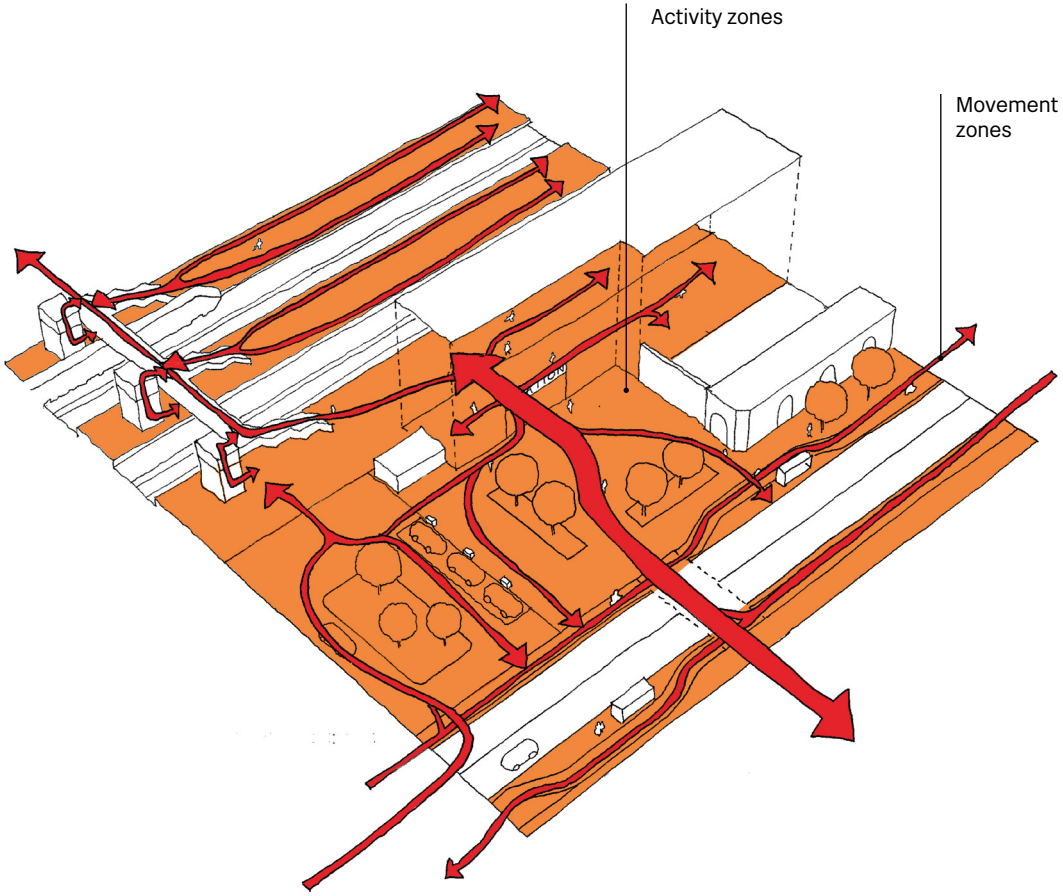


Image 3.2
Any town diagram highlighting movement and activity zones in the public realm areas

3.2.1 Movement Zones

Movement zones within the station public realm and those connecting to and from the station should be planned spatially. Creating an inclusive movement framework of clear and convenient routes between key points for all users enables the station to function appropriately.

It is important to understand the different types of movement taking place at stations. The pedestrian, cycling and vehicular flows, the capacity of each, the interactions between them, any level changes and access points for servicing and emergencies. The 'end to end journey' experience should be designed as well as other movement patterns within the station public realm to create safe, accessible and inclusive movement routes.

3.2.2 How to define movement zones

Key routes should be identified, and a hierarchy established to prioritise movement types within the space available. In the design of movement zones, consideration should be given to provide for future flexibility both in terms of capacity and also to accommodate changing modes of transportation and requirements such as shared mobility and mobility hubs, buses, demand responsive transit (DRT), taxi and trams.

3.2.3 Pedestrian movement zones

The station public realm should be as vehicle free as possible, giving priority to pedestrian movement. Key movement zones should consider the following key points / activities:

- Interchange - routes connecting public transport, cycle facilities, micro mobility hubs
- Community - routes to and from the station as well as within the public realm should recognise wider pedestrian connections and desire lines such as crossing points and local connections; high footfall generators such as retail streets, event destinations, work places and residences.
- Station entrance - the station entrance should be clearly visible when approaching the station
- Key station facilities - ticketing and information facilities should be easily and clearly accessible
- Platforms - routes to platforms should be clear and as straightforward as possible for all passengers, enabling efficient access and accessible routes that allow for passengers with large luggage, cycles, service dogs or buggies for example
- Commercial - Servicing of commercial units is often carried out on foot with the addition of trolleys or carts to move goods. Servicing routes should be planned so as not to conflict with passenger movement particularly at peak times
- Emergencies - Pedestrian movements during perturbation and emergency situation should be clearly planned and designed with rendezvous points, evacuation routes and fire escapes.

3.2.4 Cycle and micro mobility movement zones

Cycling and micro mobility should be encouraged and thus, movement to and from the associated facilities carefully planned to enable clear and safe movement. In particular;

Routes connecting the wider context to the cycling and micro mobility facilities recognised and extended within the station environment

Accessible clear and safe routes with ramps or lifts within the public realm that connect from the platforms and mobility services to key destinations and facilities, allowing passengers with cycles and micro mobility onto trains or as onward travel to encourage use of these modes of transport.

NR Guidance Suite Reference

Parking & Mobility
NR/GN/CIV/200/11

Standards Reference

Department for Transport, Security in the Design of Stations (SIDOS) Guide

3.2 Movement Zones

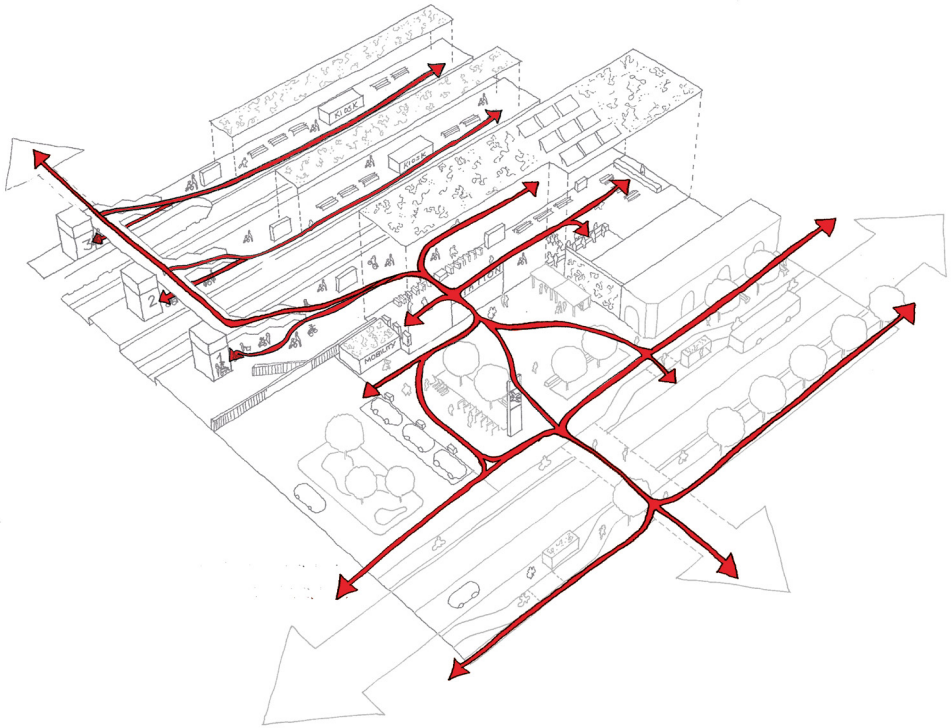


Image 3.3
Example Pedestrian movement zones

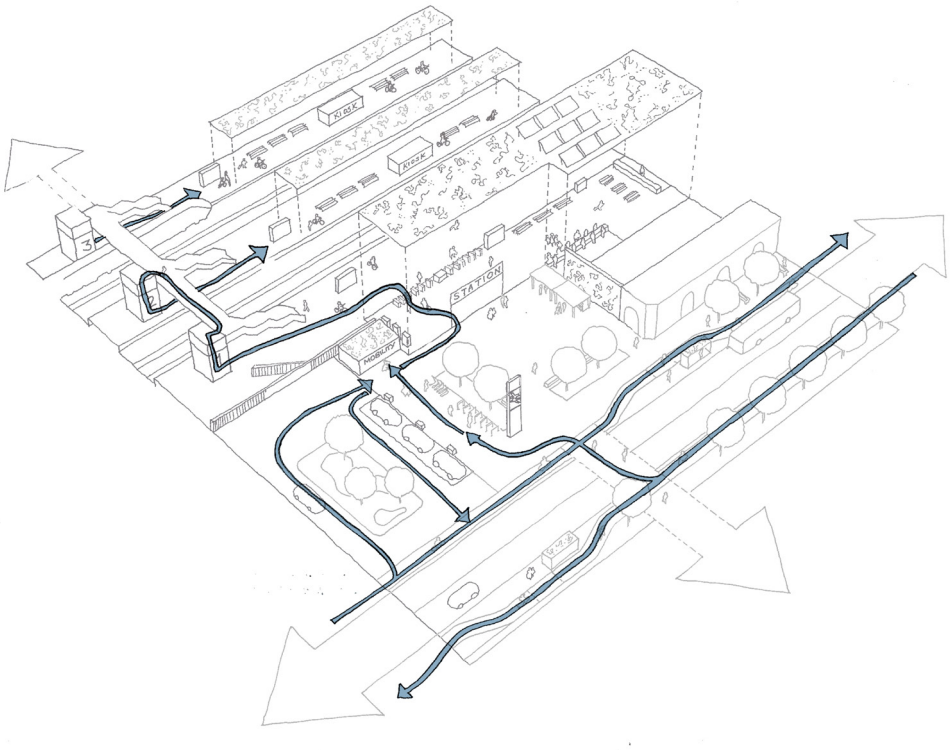


Image 3.4
Example Cycle and micro mobility movement zones

3.2.5 Vehicle movement zones

At commuter stations in particular there are often large expanses of tarmac in front of or adjacent to a station that make for undesirable pedestrian environments. Where parking is a key requirement pedestrian movement should still guide the design to provide generous and direct pedestrian spaces that connect on desire lines between the station entrance and identified routes.

Where parking is not a requirement there is an opportunity to convert the space given over to it into high-quality public places where people will want to linger and enjoy. As part of the design process, priority should be given to electric vehicles or shared journeys to reduce carbon and improve air quality.

Generally, private car parking can be located further away from the station entrance however blue badge parking, shared vehicles and taxi hire should be conveniently located. Vehicles should be removed from the station public realm where possible whilst maintaining emergency vehicle access.

- Blue badge parking should be accessible and conveniently located, to allow a clear and accessible route or 50m of less to the station entrance where possible
- Taxi rank and shared car pick up point to be located to allow clear, accessible and safe routes to the key station destinations and facilities. Safe waiting areas and queuing facilities should be provided.
- The private car drop off zone should be located to allow for clear and safe route to the key station destination and facilities
- Emergency access and delivery / service routes should be provided
- Clearly separate or demarcate pedestrian routes from vehicular space to provide comfortable space for pedestrians and reduce risk of collisions.

The use of public transport should be encouraged and vehicle zones for shared and cleaner transport prioritised over private cars.

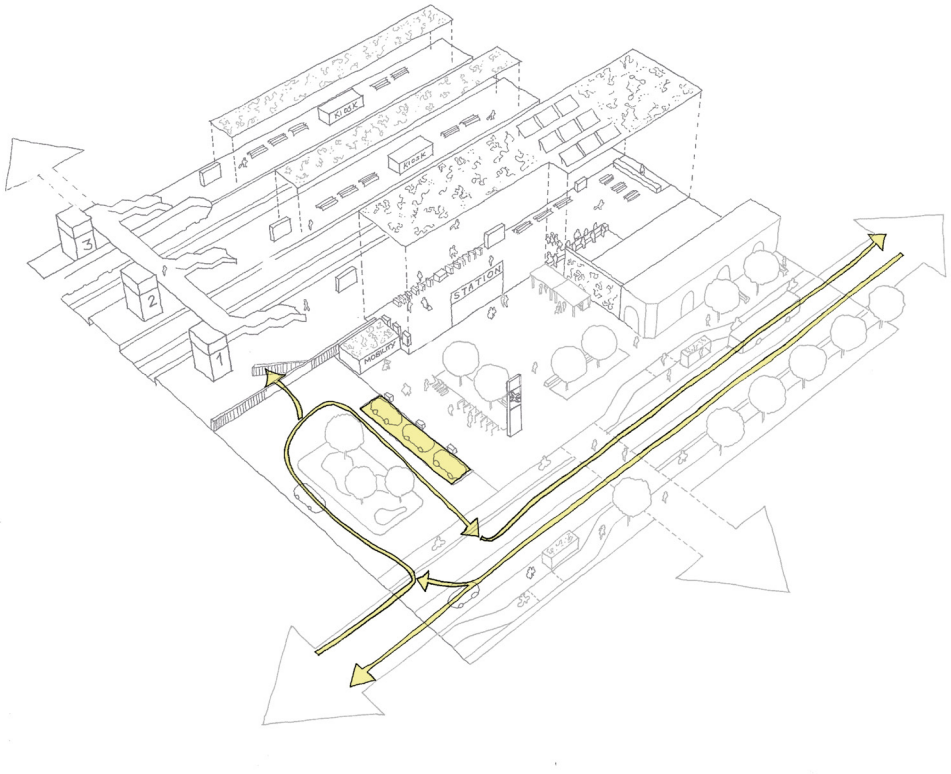


Image 3.5
Example vehicle movement zones

3.2.6 Movement Zone examples

A number of journeys have been selected to demonstrate the movement zones.

1. The passenger journey - from the wider context beyond the station boundary through the station, via a ticket machine to the train
2. The passenger journey - From the platform to onwards travel options, interchange stops, walking routes, cycle routes, car club, park etc.
3. The passenger journey - From arrival at a station in a vehicle as a blue badge holder to information
4. The cyclists journey – from beyond the station, to cycling facilities to train
5. Emergency situation - Emergency passenger movement, safe passage to emergency safety point and access for emergency vehicle movement.

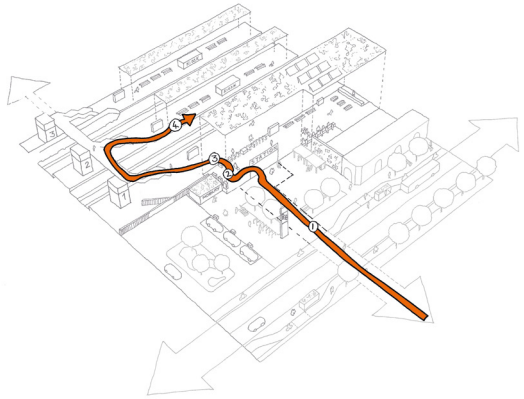


Image 3.6
1. The passenger journey entering the station by foot

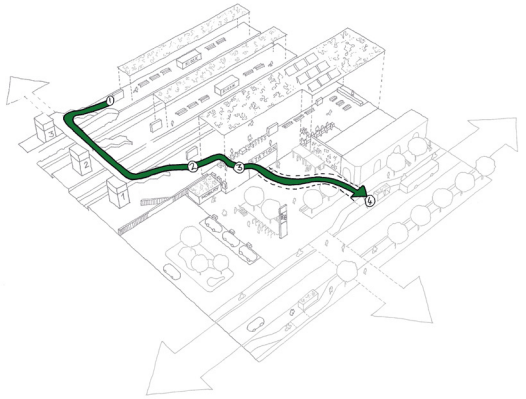


Image 3.7
2. The passenger journey arriving by train and departing

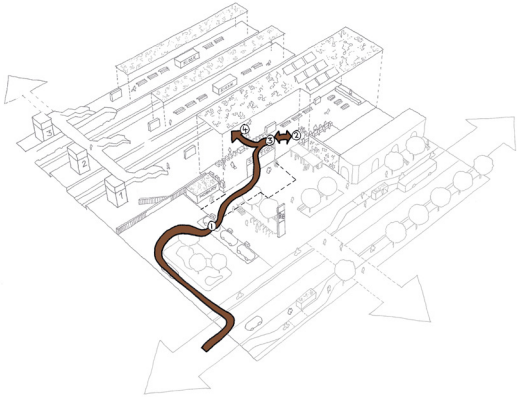


Image 3.8
3. The passenger journey arriving in a vehicle as a blue badge holder

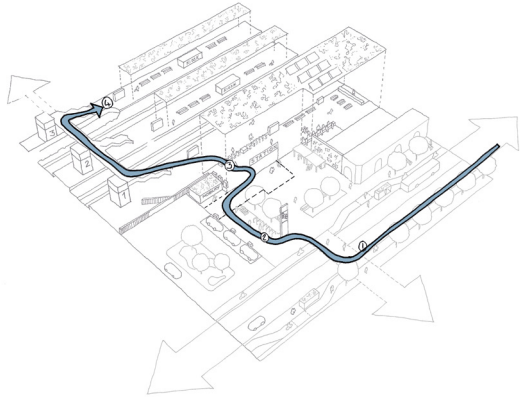


Image 3.9
4. The cyclists journey

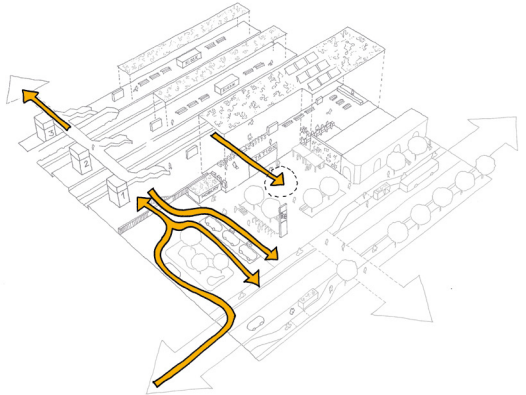


Image 3.10
5. An emergency situation

3.2.7 Hierarchy of movement

Encouraging more pedestrian movement helps to activate places, reduce congestion on the public transport and road networks, and provide benefits to an individual's health and well-being. At stations, it is reasonable to expect that the public realm should in general prioritise pedestrian movement, followed by cycle/micro mobility and then vehicular movements.

In some instances, identifying a process for agreeing an appropriate movement hierarchy relative to the context may be required to help inform the public realm design. This should be informed by the Parking and Mobility Guidance and Station Capacity planning guidance.

Once the movement hierarchy and movement zones have been established. Checks should be made to reduce clashes between movement types.

3.2.8 Capacity and dimensions

When designing for movement zones that are accessible to all and enjoyable to use, routes should be appropriately dimensioned to the numbers of people likely to use them. The appropriate size should be based on the predicted flow.

Reference should be made to the station capacity planning guidance to understand the numbers and flow of passengers at the station and the associated space requirements. Passenger numbers flex greatly during the day and so movement zones should be designed to flex to accommodate this and compatible adjacent movement zones may overlap. The emerging public realm design should be tested for predicted peak flow numbers and as well as quieter times to confirm that the station functions well, is easy and logical to use, and is attractive at all times.

NR Guidance Suite Reference
Station Design Guidance NR/GN/CIV/100/02
Station Capacity NR/GN/CIV/100/03
Wayfinding NR/GN/CIV/300/01

3.2.9 Movement and wayfinding

The public realm should provide intuitive way finding wherever possible. Clear sight lines to key station destinations such as the station entrance, ticketing, information, and transport interchange facilities should be planned as a priority. When intuitive way finding works well, there is less need for wayfinding signage and additional directional information which can clutter the public realm.

3.3.1 Activity Zones

In support of and interwoven alongside movement zones should be the inclusion of activity zones.

Creating zones for activities within the public realm helps generate spaces that people want to stay in and enjoy. It fosters placemaking with local identity and provides space for the community. It facilitates space for environmental interventions and room for commercial activities. The specific type of activities that should be included will depend on the individual station, the local area, and types of users.

This section sets out examples of spatial requirements based on the 6 Public Realm Considerations. The aim is to assist spatial planning of the public realm by creating zones, the location and hierarchy of which relate to the movement zones identified in section 3.3.

The detailed requirements of each activity require consideration, for example defining tenanted external spaces, license requirements, control of waste or drainage and utilities connections. In space constrained areas, compatible zones may overlap.

NR Guidance Suite Reference

Station Facilities and Amenities
NR/GN/CIV/200/03

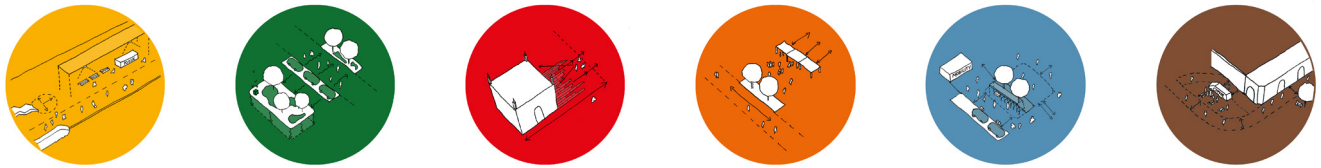


Image 3.11
Activity zones relating to each of the 6 consideration

Image 3.12
West Hampstead Station

3.3.2 Passenger Activity Zones

Design of passenger spatial activity zone to consider:

- Seating and street furniture - located so that they do not form obstructions, provide accessible rest points at regular intervals, relate to passenger uses for example quiet seating areas, waiting zones by information signage or space to eat their own food
- Lighting - designed to create safe and welcoming environments
- Dwelling areas - located that are overlooked, provide surveillance, cater for flexibility of uses and adjacent activities and provide quality passenger facilities that foster a sense of pride and comfort
- Wayfinding - Spatial arrangement of uses to make wayfinding intuitive
- Waiting and decision making spaces - Space at the start or end of any level changes and space for threshold zones at arrival points

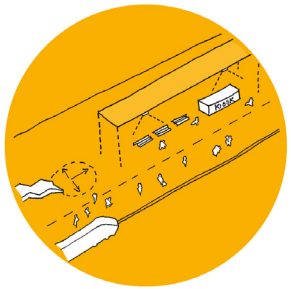


Image 3.13
Passenger activity zone vignette

3.3.3 Environment Activity Zones

Design of environmental zones to consider:

- Utilising all surfaces - roofs, vertical surfaces and ground plane to introduce environmentally focussed interventions
- SuDS - Introducing SuDS where possible, both stand alone or integrated with other activity zones
- Windbreaks - shelters for waiting, commercial and dwelling or trees and built form to minimise impact
- Recycling, food waste bins and public water fountains - located in convenient locations
- Information zone - to aid understanding of local weather, energy use and carbon related statistics
- Planting zones - that form integral elements of the public realm and provide improvements to air quality, shelter, windbreaks, local identity, drainage solutions and aesthetic value
-

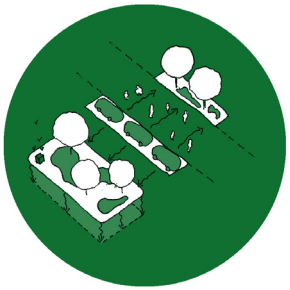


Image 3.14
Environment activity zone vignette

3.3.4 Placemaking Activity Zones

Placemaking spatial activity zones to consider:

- Architectural or historical features - Space to reflect and view the station's history and evolution
- Set backs - Respect for the context by honouring set backs, local vernacular and urban grain
- Cultural uses - Planning space for cultural uses
- Views - Planning spatially to enhance key views to and from the station, consider elevated or covered viewing areas to enhance the experience and provide comfort
- Landmark - Celebrating the station as a landmark by designing space within the public realm to reinforce the character and status

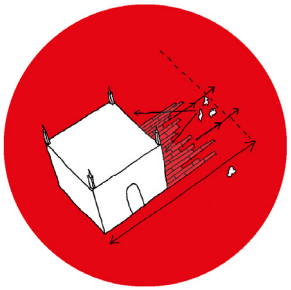


Image 3.15
Placemaking activity zone vignette

3.3.5 Community Activity Zones

Community spatial activity zone to consider:

- Interaction - spaces within the public realm where communities can interact and that link to neighbouring routes and facilities
- Facilities or storage - Requirements for community involvement for example community noticeboards, gardening equipment, event facilities to hire
- Flexible spaces and facilities - that can cater for small or large numbers of people and can accommodate changing uses over time and throughout the year

3.3.6 Interchange Activity Zones

Interchange spatial activity zones to consider;

- Waiting areas - Convenient and comfortable
- Cycle and scooter parking - Secure and convenient
- Digital information - adjacent to interchange facilities to ease transfer between modes
- Kerb space for pick up and set down - Managed, convenient and safe including well lit waiting areas with sight-lines for taxis, shared vehicles and private vehicles as well as for deliveries and servicing vehicles
- Parking facilities - located according to the parking and mobility guidance including charging and parking infrastructure such as barriers, sensors, and payment machines. Prioritise locations of shared vehicles, electric vehicle and allow space for future sustainable methods of transport

3.3.7 Commercial Activity Zones

Commercial spatial activity zones to consider:

- Flexible spaces - with access to pop up power and water that enable temporary uses such as events, regular markets and exhibits.
- Permanent spaces - that can be used for commercial use by Network Rail or others
- Business spaces - Creating spaces to do business, for example business meeting areas at stations, bookable meeting spaces, quiet zones for private calls, laptop docking/charging points
- Threshold zones - to commercial activities such as retail units to enable spill out spaces and dwelling areas away form movement zones
- Commercial activity - located to overlook public realm spaces to enhance the sense of safety

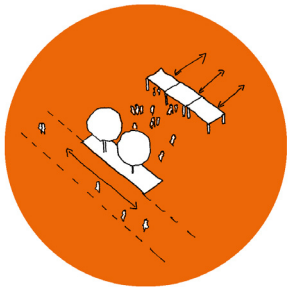


Image 3.16
Community activity zone vignette

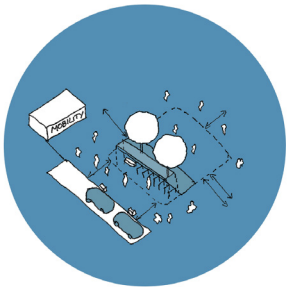


Image 3.17
Interchnage activity zone vignette

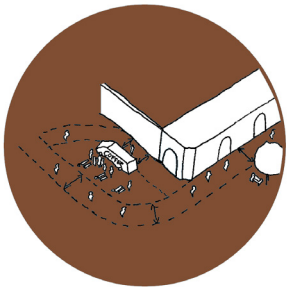


Image 3.18
Commercial activity zone vignette

3.4.1 Personal safety

It is important that people using the station feel safe. Good design and subsequent maintenance of the public realm can reduce opportunities for crime and improve passenger and staff's perception of safety.

Visibility
Providing clear sight lights within the public realm significantly enhances the perception of safety and plays a role in reducing and deterring crime. Avoiding corners, recesses and wide pillars and designing physical barriers such as fences and shelters to be transparent maximises opportunities to observe and be observed. Lighting should be uniform in coverage and intensity and of sufficient brightness to see an on-comer's face and signage to be easily read.

Public Realm Elements
Objects within the public realm should be selected and be spatially positioned to deter crime and avoid creating concealment opportunities. Elements adjacent to boundaries should be chosen to deter climbing and waiting areas positioned in spaces that are overlooked and well lit. The materiality of the public realm should be robust and selected for ease of maintenance. The station environment should remain in a good state of repair and be clean and tidy to enhance the perception of a safe and cared for environment.

Information
Clearly positioned, accessible and legible passenger information enhances passenger confidence. Passenger Confidence allows quick decisions to be made which in turn reduces the opportunity for criminal activity. Passengers should also have the means to call for assistance when required and as such emergency and information facilities and /or positioning of staff should be planned.

Special events
Movement zones and destinations should be carefully planned for emergency evacuation scenarios, abnormal and special events affecting the local area such as festivals and sporting events and significant transport delays.

3.4.2 Hostile Vehicle Mitigation (HVM)

The public realm often provides the first line of defence from hostile vehicles. To integrate successfully, security measures should fulfil numerous requirements such as maintaining public access yet preventing unwanted access, maintaining an accessible environment yet restricting certain types of movement, be aesthetically sympathetic and not pose excessive cost or maintenance implications.

Each station will have different security concerns and the security measures implemented should be proportional to the threat. Security solutions should be designed as an integral, positive, flexible and creative part of the public realm design.

The Network Rail Security Assurance Framework (SAF) sets the security requirements for all projects and includes the safety triage as the starting point for managing security threats.

The National Railways Security Programme (NRSP) sets out the government approach to protect the national railway network from terrorism. Consult with NR Group Security groupsecurity@networkrail.co.uk to identify the designated regional security contact so arrangements are in place to meet the requirements of the NRSP.

3.4.3 Design approach

Where it has been identified that security measures are required, creativity should be applied in designing functional and aesthetically pleasing solutions. Passive measures include static barriers, bollards sculptural elements, land form, water, walls, fences, berms, bunds, ditches, raised planters and street furniture. Active measures include operable blockers, bollards and gates.

3.4.4 Security Zones

- Beyond the station - Consideration should be given to wider site planning, traffic management and access control. Avoiding direct approach routes, managing maximum vehicle approach speed and installing threshold measures can combine in a holistic approach to site security.
- Forecourt and wider station site - The forecourt and immediate surrounds of the station generally offer the most opportunity to implement security measures. The public realm should be spatially planned to include access control and traffic. management alongside utilising physical elements.
- Threshold - The zone immediately around the asset is called, in security terms, the Threshold. This zone should be designed to control or prevent vehicular access and minimise blast effects in the event of an attack.
- Asset - HVM assets include People and Physical Assets. For stations, the asset could be the station or train itself or indeed the public realm where high numbers of people may gather.

Critical distances should be adhered to, to confirm that physical measures are effective in HVM. Elements should be no greater than 1200mm clear distance apart, measured at a height of 600mm above ground level. Elements should be a minimum of 500mm height, however, where appropriate, some types of elements may benefit from increased height beyond 900mm making the measures more conspicuous and potentially assisting the visually impaired.

Further additional security measures can be adopted to create a holistic approach to overall security. Permanent measures such as Close Circuit Television (CCTV) should be considered and re-deployable or contingency solutions such as temporary barriers or security personnel, deployed at times of enhanced threat.

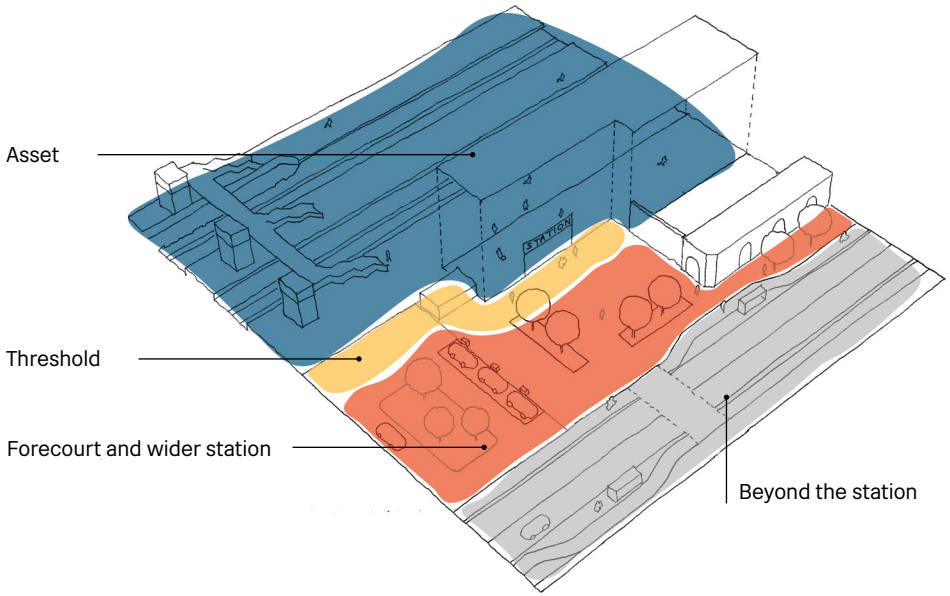


Image 3.19
Public realm security zones

3.5.1 Public Realm Areas

Public realm areas of a station include the forecourt the concourse, the platforms and space beyond the station. The scale of each of the areas varies significantly across the Network however each area typically accommodates certain types of movement and activity zones.

The Any Town example is used within this section to illustrate typical movement and activities zones along with general design considerations for each area.

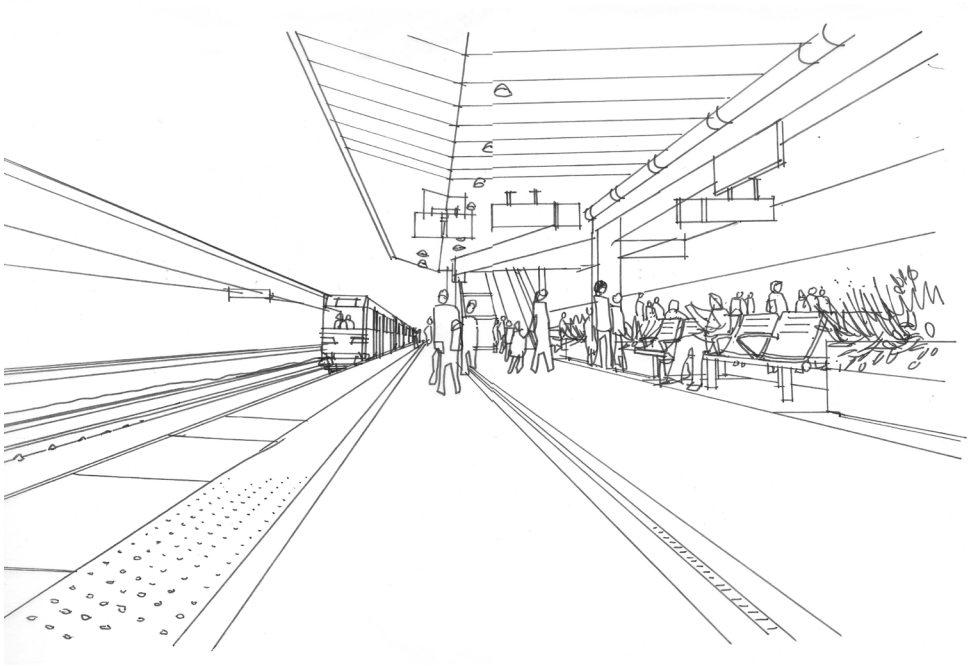


Image 3.20
Illustrative sketch of a Platform public realm area

Platforms are the spaces that connect passengers to trains and give the first immediate impression when arriving at a station.

Image 3.21
Illustrative sketch of a Concourse public realm area

The concourse is a transition space between the forecourt and the platform.

Image 3.22
Illustrative sketch of Forecourt public realm area and areas beyond the station boundary

The forecourt is the point of arrival and departure of journeys for passengers, it is the interface with the community and the stations external connection to the local context beyond the station boundary.

3.5.2 Concourse

The concourse is a transition space between the forecourt and the platform. Not all stations have concourses. Concourses are most common at the largest and busiest stations, they provide a portal between the forecourt and the platform for buying tickets, refreshments, a covered space to wait, access to facilities such as retail and cafés. A successful concourse is spacious and accessible enabling passengers to access all the platforms from one place as well as supporting dwell time. The integration of the concourse public realm with the architecture and the forecourt and platforms public realm is important for a consistent and legible approach for passengers.

Example of typical Concourse Movement Zones

- **Pedestrian Movement Zones** - connections through the concourse from entrance to platforms, routes to Train Service Information and connections to facilities and amenities
- **Cycle and micro mobility zones** - limited to passengers with cycles or micro mobility passing through the concourse to access the platforms
- **Vehicle movement zones** - limited to emergency and maintenance access and possible servicing of units

Example of typical Concourse Activity Zones

- **Passenger Activity Zones** - Waiting areas, social spaces and seating, street furniture, wayfinding and decision making spaces, quiet areas and dwell areas,
- **Environment Activity Zones** - Space for the introduction of planting, space for waste recycling and public water fountains
- **Placemaking Activity Zones** - Spaces designing to maximise views out, set backs to appreciate architectural or historical features
- **Community Activity Zones** - Space for community events / facilities such as book exchange or meeting place at a sufficient scale that can accommodate an appropriate range of activities and flexible programming
- **Interchange Activity Zones** - Space adjacent to information screens for decision making and waiting, space for dealing with crowds in the event of abnormal or emergency conditions
- **Commercial Activity Zones** - Permanent and pop up food and beverage/retail offer with active frontage benefiting from spill out areas. Business spaces, threshold and dwell spaces

Image 3.23
Edinburgh Waverley Station concourse showing seating, waiting area and retail units under the impressive historic roof structure which allows glimpsed views out to the surrounding historic skyline

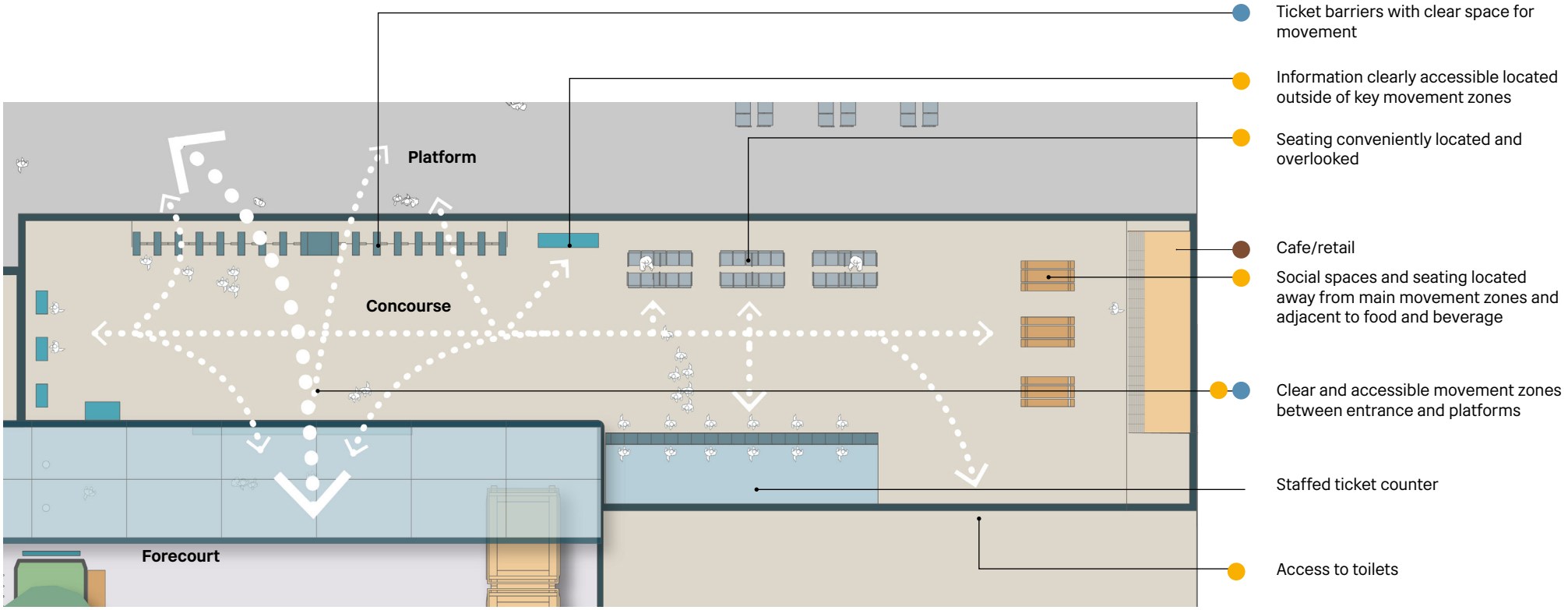


Image 3.24
Any Town Station Concourse

3.5.3 Forecourt

The forecourt is the point of arrival and departure of journeys for passengers, it is the interface with the community and the stations external connection to the local context. The legibility of the forecourt and the entrance to the station has a big influence on passenger experience.

The clarity of the public realm and the hierarchy of pedestrian movement affects this experience. Unclear, cluttered spaces can make navigating a station for the first time a difficult and daunting experience. A coordinated approach to activities and transport interchange within a forecourt can simplify passenger journeys.

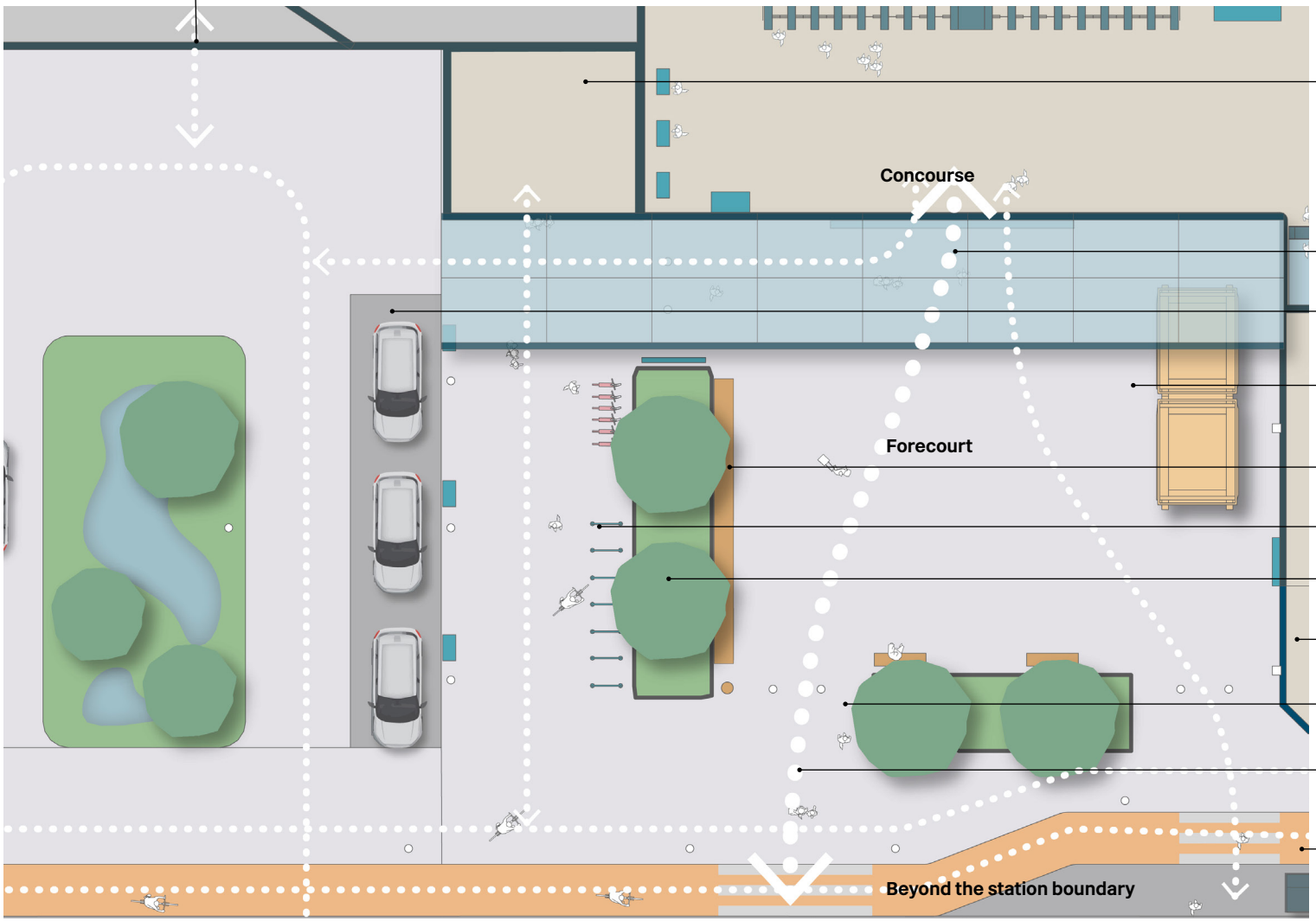
The size of forecourts varies from station to station, from a small entrance area at a rural station to a vibrant city square with markets and events outside the large urban stations. The forecourt can range from a simple drop off area to a significant civic space. Whatever the scale the station forecourt should allow space for breath and to orientate, to make decisions and understand where to go.

Example of typical Forecourt Movement Zones

- **Pedestrian Movement Zones** - Connections to and from the station entrances, weather protected walking routes, interchange connections to other transport modes, connections to station facilities, tickets and information, connections to the local community and local destinations, connections to retail, food or beverage, route for emergencies
- **Cycle and micro mobility zones** - zones linking to cycle storage and facilities, connections to local cycle routes, to communities and local destinations
- **Vehicle movement zones** - connections to parking, connections to waiting areas for taxi rank, shared car pick up point, private car drop off and pick up zone, public transport connections, emergency access and delivery / service routes

Example of typical Forecourt Activity Zones

- **Passenger Activity Zones** - Sheltered waiting areas, social spaces and seating, located in areas away from main movement flows and busy roads; at the entrance to the station there should be a clear area for decision making and for dealing with crowds in the event of abnormal, degraded or emergency conditions.
- **Environment Activity Zones** - Space for SuDS, planting and biodiversity, windbreaks and shelters, space for waste recycling and public water points
- **Placemaking Activity Zones** - Space to maximise views, set backs to appreciate architectural or historical features, space for cultural uses
- **Community Activity Zones** - Space where communities can interact and meet, space for storage for community events
- **Interchange Activity Zones** - Space for pick-up/ drop-off areas, coordinated transport interchange - mobility hubs, Taxi and Private Hire Vehicle (PHV) zone, bus stops, cycle parking, cycle hire and micro mobility. A zone for vehicle standoff where there is a threat of hostile vehicles or terrorism, enforced by bollards and other street furniture, that limits how close vehicles can get to the station building
- **Commercial Activity Zones** - Café/retail with active frontage benefiting from spill out areas, space for events such as markets, flexible space at a sufficient scale that can accommodate a wide range of activities and flexible programming



- Emergency and delivery routes planned and accessible
- Mobility Hub - Secure cycle parking, information point for shared transport, taxi waiting area, drop off / pick up point, cycle hire, car club, child car seat hire, package delivery lockers, demand responsive mini-buses point
- Level changes designed out to create accessible routes
- Blue badge parking, taxi zone and charging infrastructure located safely and conveniently with covered walkway
- Flexible space for community and commercial activity placed in areas outside of key movement zones
- Seating and rest places positioned adjacent to movement zones
- Cycle and scooter parking located adjacent to cycle route in an overlooked location
- Soft landscape zones positioned for SUDS, shade, shelter, biodiversity and placemaking
- Food and beverage outlet with external table and chairs outside of movement zones
- Integrated security line using planters and bollards and artwork
- Clear pedestrian movement zone between arrival and station entrance through secure bollard line
- Sheltered bus stop with clear movement zone to entrance

Image 3.25
Any Town Station Forecourt

3.5.4 Platforms

Platforms are the spaces that connect passengers to trains and give the first immediate impression when arriving at a station. They should be secure spaces with a focus on passenger safety, being well lit, unobstructed with clearly defined safe zones, shelter from the elements and easily accessible train information and wayfinding. They can often be non-descript, cold and bleak spaces that offer no sense of the local place and little comfort. A coordinated approach to Public Realm provides an opportunity to create a positive first impression and a comfortable, safe place to wait for onward travel.

NR Guidance Suite Reference

Station Footbridges & Subways
NR-GN-CIV-200-07

Standards Reference

Rail Industry Standard RIS-7016-INS
Issue: 1.2 July 2021

Example of typical Platform Movement Zones

- **Pedestrian Movement Zones** - Connections from each platform arrival area to entire length of platform from all
- **Cycle and micro mobility zones** - limited to passengers with cycles or micro mobility on platforms to access trains
- **Vehicle movement zones** - limited to emergency and maintenance access and possible servicing of units

Example of typical Platform Activity Zones

- **Passenger Activity Zones** - Waiting areas with seating and shelter, space for dealing with crowds in the event of abnormal or emergency conditions
- **Environment Activity Zones** - Space for SuDS, planting and biodiversity
- **Placemaking Activity Zones** - assessing views to the lineside and wider context and how these views can be controlled or enhanced
- **Community Activity Zones** - space for community information such as a noticeboard
- **Interchange Activity Zones** - Space adjacent to information screens and systems for decision making. Threshold space outside of lifts and at the bottom of steps for waiting or decision making. Space for information for onward travel options
- **Commercial Activity Zones** - Café/retail with active frontage benefiting from spill out areas, space for business use

Image 3.26
Grange Station platform showing a sheltered waiting area with seating

Image 3.27
Hackney Downs Station platform showing a planting area

3.5 Public Realm Areas

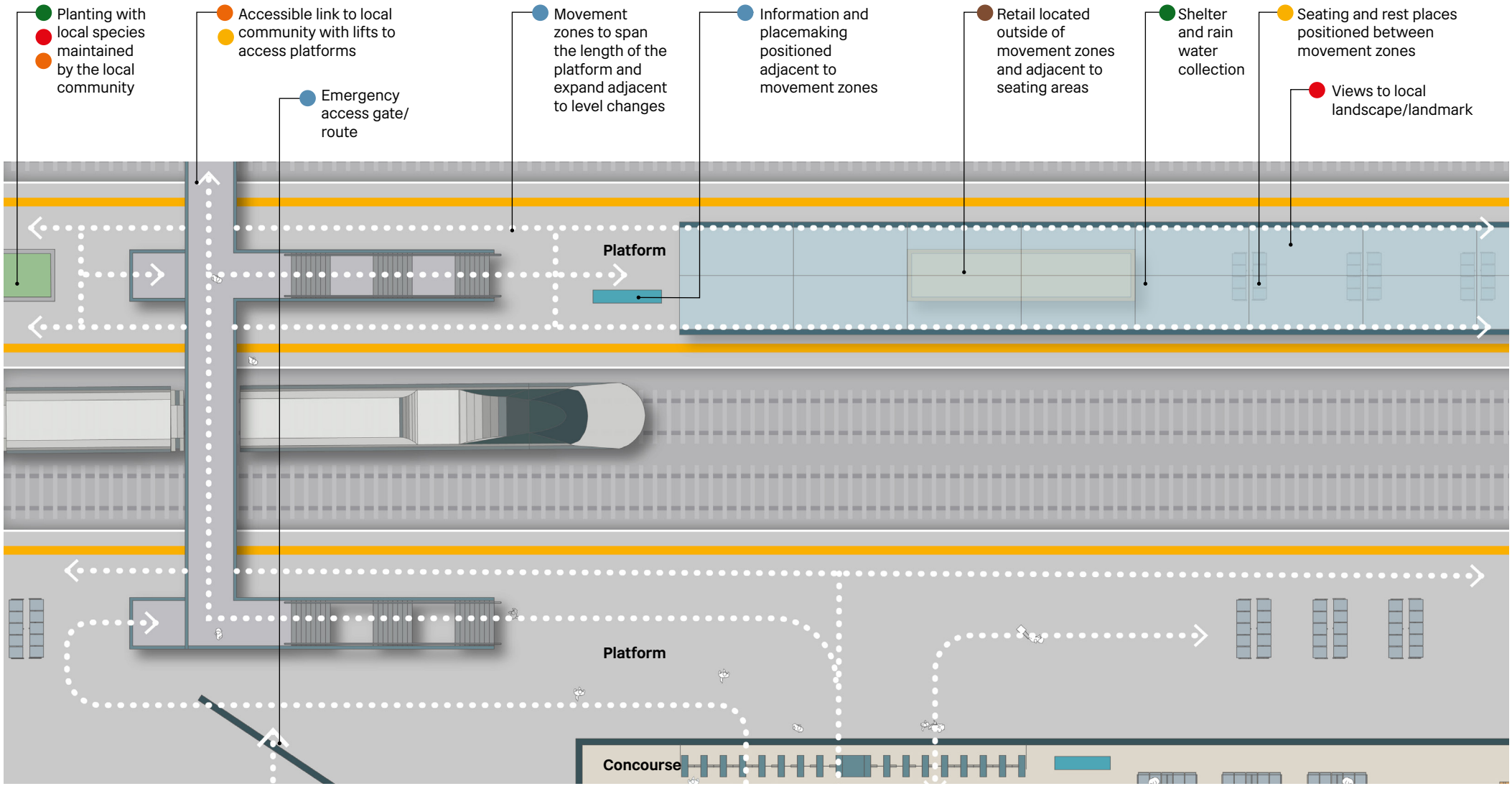


Image 3.28
Any Town Station Platforms

3.5.5 Beyond the station

The context of the station is vital to understand to appropriately design the public realm. The station should interact easily with the surrounding area and the design of the public realm should recognise the neighbouring routes, connections, destinations and audiences to best plan the relationships with the wider area.

Particularly important are the existing and future movement patterns that influence how passengers arrive at and depart from the station, these include pedestrian and cycle links, public transport interchanges and vehicle routes and parking facilities.

During the design of the public realm it may be possible to influence the design of areas beyond the station. The appropriate planning guidance and stakeholder engagement should be incorporated from the outset of the project to enable any beneficial impacts of station design can filtrate into the wider context.

Example of typical contextual Movement Zones

- **Pedestrian Movement Zones** - Connections to transport interchange, routes to and from the station
- **Cycle and micro mobility zones** - Connections to transport interchange, routes to and from the station
- **Vehicle movement zones** - Public transport interchanges, surrounding road network

Example of typical contextual Activity Zones

- **Passenger Activity Zones** - Seating areas, street furniture, adjacent public realm, civic spaces or destinations such as events space
- **Environment Activity Zones** - Space for SuDS, planting and biodiversity
- **Placemaking Activity Zones** - Adjacent public spaces or landmarks, assessment of views and how these views can be controlled or enhanced
- **Community Activity Zones** - Adjacent residential areas and community facilities
- **Interchange Activity Zones** - Adjacent transport modes and infrastructure
- **Commercial Activity Zones** - Adjacent retail and employment areas, planning of active frontage benefiting from spill out areas

Image 3.29
Aerial of multi award winning London Bridge station. Recognised for its urban design response including reconnecting to its local context and its success not just as an infrastructure project, but as a civic development

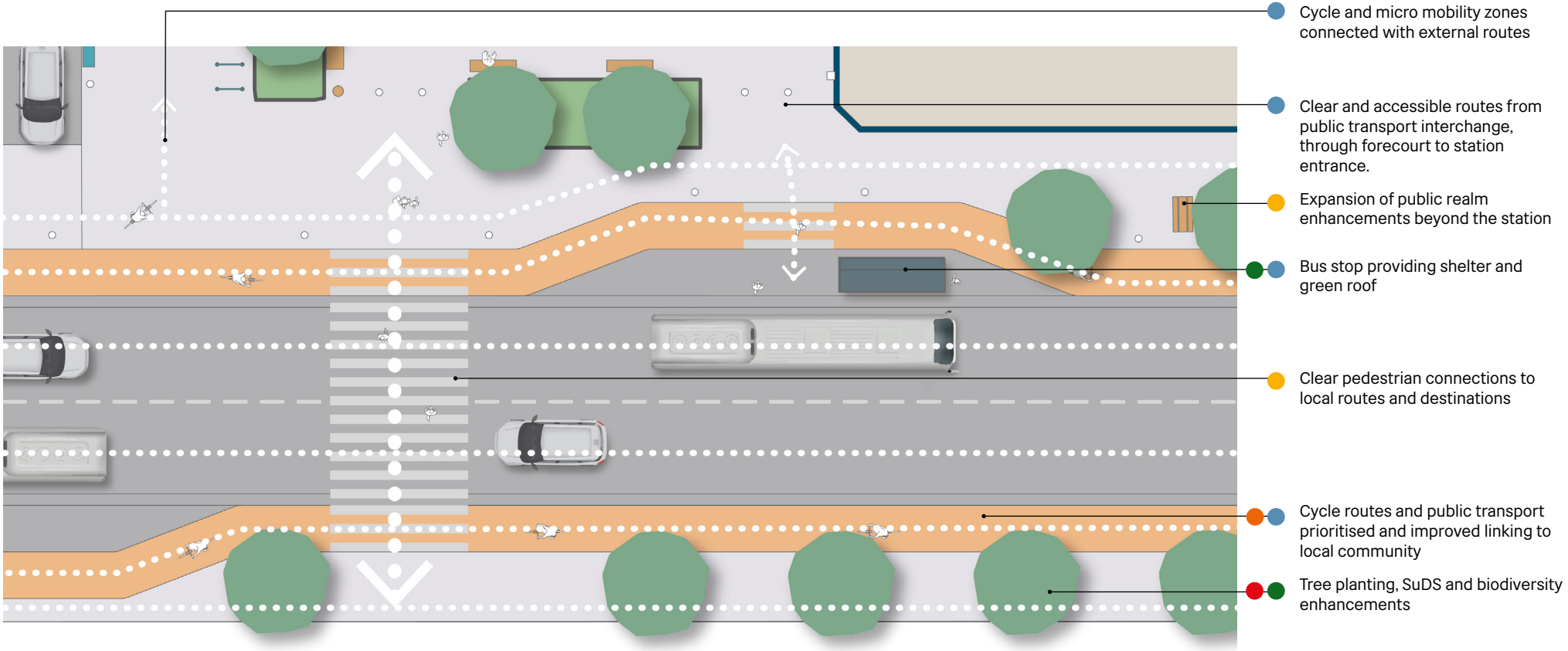


Image 3.30
Any Town Beyond the station

3.6.1 Station Types

This guidance covers public realm design across the entire Network Rail network. This includes large scale international stations through to small, unstaffed platforms. Necessarily then the extent and type of public realm will vary across station types. When designing public realm, the station should be planned for both its current and future requirements. Any investment in the station should be flexible enough to provide for changes of use, transportation modes and passenger habits.

Network Rail guidance in this suite sets out varying ways of defining the station type. Historically, DfT station categories from A to F have been used. An alternative categorisation set out in the Parking and Mobility guidance loosely relates to the current station classifications however, instead of being based predominantly on footfall, it is their context – be it spatial, socio-demographic, or political – that ultimately influences how they are likely to evolve in the future. Whatever the station type, the public realm should be designed to be aspirational, to be place specific, to meet the needs of its current and future passengers and enhance the place in which it sits.

Standards Reference
Diversity Impact Assessments (DIAs)

A

National Hub

Staffed

Over 2m trips per year

28 stations cross Britain

Public Realm likely to include:
- Large destination forecourt
- Large destination concourse building
- Multiple large platforms

Reading Station, Category A

Image 3.31
Platform © Network Rail

B

Regional Interchange

Staffed

Over 2m trips per year

67 stations cross Britain

Public Realm likely to include:
- Large destination forecourt
- Large destination concourse building
- Multiple platforms

Sheffield Station, Category B

Image 3.32
Station forecourt © LDA Design

C

Important Feeder

Staffed

0.5-2m trips per year

248 stations cross Britain

Public Realm likely to include:
- Forecourt area
- Concourse building
- Multiple platforms

Bath Spa Station, Category C

Image 3.33
Bath Spa station

D

Medium sized stations

Staffed

0.25 - 0.5 million trips per year

298 stations cross Britain

Public Realm likely to include:
- Forecourt area
- Concourse building
- Multiple platforms

E

Small sized

Staffed

Under 0.25 million trips per year

695 stations cross Britain

Public Realm likely to include:
- Small forecourt area
- Small concourse building
- Small amount of platforms

F

Small sized

Unstaffed

trips per year

1200 stations cross Britain

Public Realm likely to include:
- Limited forecourt area
- Small or no concourse building
- One or two platforms

Kew Gardens, Category D

Image 3.34
Station forecourt

Hackney Wick Station, Category E

Image 3.35
Hackney Wick

Bottesford Station, Category F

Image 3.36
Bottesford

Representative station models defined in the Parking and Mobility at Stations guidance

1. Gateway (no parking)
Principal station located in the urban core of major cities

2. Gateway (with parking)
Principal station located in or close to the urban core of cities

3. Minor Gateway
Located close to the centre of medium/large towns

4. Suburban
Located within mid to high density urban areas with mix of residential, commercial and industrial land uses

5. Local / Rural
Located at fringes of small towns and may serve multiple surrounding settlements

6. Single Purpose / Parkways
Frequently located adjacent to suburban retail parks or airports

NR Guidance Suite Reference

Parking & Mobility At Stations
NR/GN/CIV/200/11

Image 3.37
London Bridge Station New Forms Garden, Stainer Street. Part of four temporary public gardens, created using materials recycled from the recent RHS Hampton Court Garden Festival. Commissioned by Team London Bridge, the local business improvement district (BID), with support from Network Rail

4

Public Realm Design Guidance for Stations

Public Realm Elements

Image 4.1
Comfortable and stylish new seating has been rolled out at London Victoria, Kings Cross and London Bridge stations in the latest initiative from the Network Rail South East route. The seats made by Green Furniture Concepts, use a multi-coloured wooden configuration with tables built in for laptops and coffee cups

4.1 Public Realm Elements Overview

4.1.1 Overview

The Public Realm elements are part of the response to the Station Public Realm Brief. They form a kit of parts of physical design components.

Each public realm element should be tailored to the context and locality of each station whilst maintaining a consistent national identity where appropriate. As such this section includes guidance on how elements should be approached and considered when specifying products rather than to specify particular products.

There are several areas of cross over with other Network Rail Guidance documents. Where this is the case to avoid duplicating information a reference is provided to signpost users to the relevant guidance documents in the NR Guidance Suite Reference box. Where other network rail documents or national guidance is relevant these are referenced in the Standards reference box.

The environmental aspiration of projects should be agreed and set to inform the specification of products. For example the use of CEEQUAL or BREEAM at different stages of a project can inform decisions. The type of award, performance rating and targets that the project is aiming to achieve can also inform decisions. Refer to Appendix B for further information.

NR L2 ENV 015 sets out Network Rail's minimum requirements for the management of environment and social risks and opportunities during design and/or construction activities.

An Environment and Social Appraisal (ESA) should be completed at the start of a project and updated at each milestone. An Environment and Social Management Plans (ESMP) should be produced to address all risks and opportunities identified by the ESA, applicable to the design or construction of the project. Life Cycle Costing (LCC) and Option Selection

Life cycle costing should be carried out for all works; regardless of size, complexity or type. Project decisions should be based on the life-cycle of the asset, including environmental and social impacts, to deliver more efficient, more reliable and more sustainable long-term solutions rather than implementing a quicker, lower cost option.

NR Guidance Suite Reference

Security Assurance Framework (SAF)

Standards Reference

Environmental and Social Minimum Requirements
NR/L2/ENV/015

4.2 Hard surfaces

4.2.1 Approach to hard surfaces

The approach to using hard surfaces should consider:

- How can the approach to hard surfaces reduce environmental impacts and use lower embodied carbon options?
- How can the hard surfaces reinforce local identity and placemaking?
- How can the hard surfaces contribute towards a safe and enjoyable passenger experience?
- What are the hard surfacing coordination and technical requirements for project delivery?
- What are the hard surfacing performance requirements for the project and local environment?

Shared surfaces where there is no kerb delineation between vehicles and pedestrians can cause inclusivity and accessibility issues to a range of users and generally speaking won't be appropriate for use within the public realm at stations. However, there may be circumstances where if the safety of a shared surface can be proved and positive endorsement from engagement with accessibility groups has been received they may be appropriate.

Standards Reference

DfT, National Technical Specification Notice, Persons with Reduced Mobility, 2021
(4.2.1.4. Floor surfaces)

Design of buildings and their approaches to meet the needs of disabled people (2018)
BS 8300-1 and 2

Pavements constructed with clay, concrete or natural stone paving units - Code of practice for the structural design of pavements using modular paving units (2021)
BS 7533-101

Slip resistance values (SRV) (2010)
BS 5395-1 Clause 7

Department for Transport
Design Standards for Accessible Railway Stations Code of Practice (2015)
Section I1. Floors

Royal National Institute of Blind People (RNIB
Building Sight (1995) handbook

The Green Guide to Specification, 4th Edition

4.2.2 Surface materials

Environmental principles:
- The use of materials with lower embodied carbon and recycled/secondary aggregates.
- Materials to be responsibly sourced from local sources where possible.
- Whole life cycle of products to be understood.
- Minimising the amount of hard standing to reduce flood risk and prioritising permeable solutions

Placemaking Principles:
- Paving materials should be driven by local geology and used to reinforce local identity and character.
- Heritage materials should be retained and reused for community and heritage value.

Passenger Principles:
- Check that hard landscaping and all formal provision for walking and cycling is accessible, sustainable and inclusive.
- Paving material should be relatively uniform in tone, avoiding strong contrasting patterns which can be perceived as steps or holes by the visually impaired.
- Surfaces should be even and avoid gaps, new cobbled surfaces are unlikely to be appropriate even in historic environments.
- Joints between flags and pavers should not be less than 2mm and not more than 5mm wide to avoid uneven surfaces and gaps between surfaces. For pedestrian-only footways, flags can be laid with wider joints (6-10mm) filled with compacted mortar
- Potential hazards such as level changes and steps should be indicated with tactile warning surfaces and visual indicators such as colour contrast step nosings.

Coordination and Technical principles:
- Facilitate a seamless integration of materials by careful detailing alignments that minimise unnecessary technical complication.
- Hard landscaping to be coordinated with street furniture, utilities, inspection covers.
- Public art and wayfinding - facilitate the coordination of infloor elements
- Coordination with water management, ensuring falls and cambers are appropriate
- Establishing who will maintain and repair proposed hard landscaping.
- Create acceptable gradients and cross-falls for pavements.

Performance requirements
- Materials should be selected based on understanding the performance specification and requirements for example loading requirements.
- Materials selected should be robust, durable and appropriate for the context
- Paving materials should be slip resistant
- Visual contrast should be provided between pavements, walls and street furniture to help people with visual impairments to safely navigate external routes

The following pages in Image 4.3 Table of Surface Types set out the suitable application, options, benefits and considerations for typical surface materials.

Image 4.2
Bath Spa Station forecourt showing use of natural stone paving materials

4.2 Hard surfaces

Natural Stone Paving

Suitable Application
- Forecourt
- Concourse
- Platform

Options
- Granite
- Sandstone

Benefits
- Uses to reflect local identity
- Identity and character
- High quality
- Robust
- Long lifespan

Considerations
- Non-porous
- Can have low slip resistance
- Health and safety impact of on site cutting
- Local procurement

Block Paving

Suitable Application
- Forecourt
- Concourse
- Platform

Options
- Permeable paving options

Benefits
- Affordability
- Consistent appearance
- Long lifespan
- Robust

Considerations
- Lower aesthetic value than natural stone
- Health and safety impact of on site cutting

Resin bound Aggregate

Suitable Application
- Footpaths
- Cycle paths
- Base of trees

Options
- Choice of aggregates e.g. natural aggregates, marble, recycled glass
- Porous resin-bound

Benefits
- Smooth, suitable for wheelchairs and pushchairs
- Robust and durable
- Low maintenance
- If permeable, surface reduces run off

Considerations
- Less formal appearance unsuitable in some settings.
- Monotonous surface if used indiscriminately
- Opportunities to use recycled/local aggregates
- End of life disposal

Asphalt

Suitable Application
- Platforms
- Forecourt - limited use
- Cycle paths

Options
- Black
- Permeable option
- Surface dressing
- Rolled in aggregates

Benefits
- Hard wearing
- Low maintenance
- Smooth surface suitable for wheelchairs, pushchairs, bicycles and scooters
- Relatively inexpensive
- Permeable option reduces run off

Considerations
- Low quality aesthetic
- Easy to repair, can create patchwork effect due to colour fade

Insitu Concrete

Suitable Application
- Steps
- Ramps
- Concourse
- Platform
- Forecourt

Options
- Exposed/brush finish

Benefits
- Hard wearing
- Limited UV colour fade
- Good for wheelchair users
- Brushed finish good slip
- Resistance for ramps / slopes

Considerations
- Environmental impact
- Quality control can become difficult
- Installation is weather dependent due to long curing time

Image 4.3
List of surface types

4.2 Hard surfaces

Reuse of existing historic paving

Suitable Application
- Suitable where existing historic high quality paving is in place

Options
- Retain
- Remove and relay
- Remove and improve and relay

Benefits
- Identity and character
- Reflecting history
- Lower embodied carbon option

Considerations
- Paving may require improvements to slip resistance.
- Accessibility requirements for disabled people

Internal Flooring

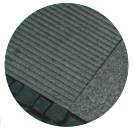
Suitable Application
- Internal concourse areas

Options
- Limestone
- Marble
- Granite
- Yorkstone
- Terrazzo
- and others

Benefits
- Reflect identity and character of station
- High quality
- Robust
- Long lifespan

Considerations
- Consider architectural material palette
- Slip resistance of paving
- Maintenance and wear on high traffic areas

Tactile paving (Blister/Corduroy)



Suitable Application
- Paving for all controlled and uncontrolled crossings; for use at platforms, change of zone, demarcation of segregated cycle tracks and pedestrian crossings

Options
- Blister and corduroy paving in

Benefits
- Assures adequate accessibility requirements for all road users

Considerations
- Can be uncomfortable for wheelchair, mobility scooter and buggy users
- Creates visual clutter when implemented poorly

Other surfaces should be considered for specific applications in appropriate contexts outside of the main mobility zones. They include for example self-binding gravel and bark chippings around trees or in community gardens or reinforced grass for maintenance access in rural stations.

4.2.3 Kerbs and Edges

Kerbs and edges provide separation and visual definition between spaces. Often to separate transport types such as pedestrians and vehicles or a change in surface materials. Level or flush access is essential for the majority of wheelchair users and also important for cyclists and scooter users. Such access can be achieved either by dropped kerbs or raised road crossings.

There are multiple types to suit different applications and provide other benefits such as water management. The choice of kerbs and edges should respond to the local context.

Principles:

- Kerb and edges should be detailed to provide accessible, sustainable and inclusive environments for all
- Kerbs should be detectable
- Drop kerbs and flush edges should be used at all Zebra and controlled crossings, side roads and access points to parking areas used by pedestrians. On longer side roads and residential roads dropped kerbs should, where possible, be provided every 100 metres to avoid the need for wheelchair users to make lengthy detours to cross the road. Desire lines for pedestrians and visibility between crossing points should be planned.
- Kerbs and edges should be used in combination with surface materials choices to reinforce local identity and character
- Heritage kerbs and edges should be retained and reused where possible
- Kerbs and edges should be assessed for potential trip hazards

Performance requirements

- Kerbs and edges should be selected based on an understanding of the performance specification and requirements
- A choice of kerb and edge materials are available and should be selected in combination with an understanding of adjacent surface materials.

The following page on Image 4.4 sets out a table with the suitable applications for typical edges and kerbs.

Public Realm Design
Guidance for Stations
NR/GN/CIV/200/10
March 2022

Raised Kerbs

Suitable Application

- Raised kerbs to be used to delineate carriageways and footways
- Bullnose kerbs (BN), Half battered (HB), 45 splayed (SP)
- Concrete kerbs, conservation kerbs, natural stone
- Standard or wide kerbs

Flush Kerbs

Suitable Application

- Flush kerbs to be used for crossing points, parking delineation and edging for planting beds/amenity lawns
- For use between changes in hard surfacing

Integrated drainage kerb

Suitable Application

- In coordination with water management principles where high capacity drainage is required

Cycle kerbs

Suitable Application

- Suitable for use to segregate cyclists from pedestrians or vehicles.
- Cycle segregation unit
- Cycle tactile units

Bus stop kerbs

Suitable Application

- Suitable for adjacent to bus stops

Rain garden kerbs

Suitable Application

- Adjacent to planting to allow surface water to run into planted areas

Pin kerbs

Suitable Application

- Edge of surfaces between paths and soft landscaping

Drop kerbs

Suitable Application

- To allow pedestrian or cycle access

High containment kerb

Suitable Application

- Unlikely to be acceptable in public realm areas. Suitable for back of house vehicle delivery areas.

Platform Nosings/copings

Suitable Application

- Standard and bespoke
- Manufactured in accordance with relevant Network Rail Standards and British Standards
- Combined platform and tactile unit

Metal Edges

Suitable Application

- Edge of surfaces between paths and soft landscaping
- Timber edging may be appropriate in low use areas

Image 4.4
List of typical edges/kerbs

4.2.4 Details and interfaces

Within hard surfacing there are details and interfaces that should be considered, items such as covers and gratings can cause trip hazards or visual illusions and may be mistaken by blind people as a tactile surface.

The following table Image 4.6 sets out points to consider for typical details and interfaces.

Image 4.5
Example of interface detail of slot drainage and recessed cover coordinated with paving

Inspection covers

Consider
- Inspection chamber covers and service inspection chambers should be flush with the surface.
- Recessed covers to be used
- Covers to be orientated to coordinate with the paving

Event Infrastructure

Consider
- Consider access to power and communication for example pop up power supply.
- Consider unobstructed movement zones for disabled people

Infloor wayfinding

Consider
- Infloor wayfinding as part of a comprehensive and coordinated wayfinding strategy can improve the impact and effectiveness.
- Colour/contrast of wayfinding to be accessible to varied users.
- Infloor wayfinding can add a unique identity to focal spaces and reduce clutter.

Drainage details

Consider
- Wherever possible gully covers and drainage slots should be positioned as far as possible from main pedestrian flows.
- Dished channels should be avoided in main pedestrian flows.

Image 4.6
List of typical details and interfaces

Traffic calming

Consider
- Consider blind and partially sighted users, using appropriate tactile paving to mark thresholds.
- Acoustics of vehicle slowing should be considered if adjacent to residential streets.

Painted features

Consider
- Consider location of painted elements away from highly exposed or trafficked areas.
- A 'less is more' approach allows special features to be highlighted.

Street furniture

Consider
- Coordinated design and selection of street furniture allows a cohesive appearance.
- Consider the materials of furniture and the maintenance required e.g. Timber on seating to be sanded and treated.

Infloor lighting

Consider
- Infloor lighting can create glare and distraction and should generally be avoided, consider accessibility and if high level alternatives can be used

Infloor public art

Consider
- See public art section

4.3 Level Changes

4.3.1 Introduction

Many stations are not located on flat topography and the nature of a linear railway can result in significant level changes to reach the platforms or with interfaces in the surrounding area.

4.3.2 Accessibility

Changes in level can cause problems for many people. Even a single step can prevent access for disabled people, particularly with mobility impairments and can present a trip hazard. Level changes should be designed out but where they cannot be avoided and graded routes are required, they should be designed to be as shallow as possible. Steep ramps are trip/slip hazards and often require excessive effort for some people to access independently. Significant changes in level (more than 2m) requires alternative step-free options, such as lifts. It is important that journeys by lift, graded route or by steps provide the same quality of experience with none of the alternative routes feeling secondary.

Principles:

- Provide an accessible environment for all users
- Provide consistency in the palette of materials for all slopes, ramps and steps to confirm they are instantly recognisable
- Maintain desire lines where possible, whilst providing accessible routes
- Steps and ramps should comply with all relevant standards and guidance and avoid using 'stramps'

4.3.3 Terracing, banks and walls

In locations where access isn't required the use of terracing, banks, retaining walls and structures may be used to accommodate level changes.

Principles:

- Avoid vast expanses of blank walls
- Appropriate edge protection should be provided
- Explore opportunities for introducing planting and biodiversity
- Explore opportunities for incorporating art

Standards Reference

Design of buildings and their approaches to meet the needs of disabled people (2018)
BS 8300-1 and 2

DfT, Design Standards for Accessible Railway Stations Code of Practice (2015)

National Railways Security Programme (NRSP) Section 7 Station Security (Restricted)

DfT, Security in the Design of Stations (SIDOS) Guide

4.3.4 Security

Changes in level can be used for creative, passive security measures. For example, using level changes in the form of sculpted landform, berms or bunds that raise the ground level to prevent access or water features, swales or ditches that create depressions.

NR Guidance Suite Reference

Station Design Guidance
NR/GN/CIV/100/02 Section: 4.5 Circulation

Station Capacity
NR/GN/CIV/100/03 Section: 3.7.3

Inclusive Design
NR/GN/CIV/300/04

Vertical Circulation
NR/GN/CIV/200/05

Parking and Mobility
NR/GN/CIV/200/11

Footbridges & Subways
NR/GN/CIV/200/07

4.4 Drainage Features

4.4.1 Approach

The approach to surface water management at stations should be to minimise, reduce and delay the flow of surface water directly to drains and water courses, to reduce the risk of flooding. The approach should consider:

- The use of sustainable urban drainage systems and infiltration through permeable surfaces should be prioritised and should be considered at an early stage of the project
- Establish if infiltration drainage is possible
- Using appropriate technical advice sought from a drainage engineer
- Reducing the amount of non permeable surfaces used
- The use of trees, planting and soft landscaping to reduce the flow of water
- Cambers and falls of paving surfaces should direct water flows into the drainage system
- Consultation with water suppliers for any new connection arrangements to an existing sewer network.

This section outlines the drainage feature options that may be considered to manage water within the public realm. It is divided into hard surfacing drainage features and nature based drainage solutions.

4.4.2 Hard surfacing drainage features

Principles/best practice

- Hard surfacing drainage features that manage water runoff into linked sustainable urban drainage systems are preferred
- Drainage features should be considered with the adjacent surface materials and identity of the space
- Coordinated or bespoke drainage feature products may be appropriate in high quality or sensitive spaces to enhance the identity of a project.
- The choice of drainage features should be appropriate to the hydraulic capacity, e.g. high capacity drainage solutions should be used where high surface water run-off is expected.
- Load classifications of drainage features should be considered based on the requirements of the space.
- Drainage to be level with surface in public areas
- Drainage features should be inclusive and should avoid creating hazards - dished gullies should be avoided in pedestrian routes as they create uneven surfaces, slot drains should consider covers with holes sized to prevent someone wearing a stiletto heel getting stuck and gulley slots should be positioned to prevent cycle wheels getting stuck
- The maintenance requirements for any drainage features should be considered and written into a maintenance schedule, slot drains for example require regular maintenance to avoid collection of debris which can prevent them working

A detailed specification for all hard landscape including drainage features will be required at the detailed design stage of a project. A specification should include all aspects of the material quality, handling, installation technique and product life cycle. It should be drafted with references to the relevant British Standards and the National Building Specification (NBS).

Typical Hard surfacing drainage features are illustrated on the page opposite.

Standards Reference

Code of practice for surface water management for development sites
BS 8582:2013

Linear gratings

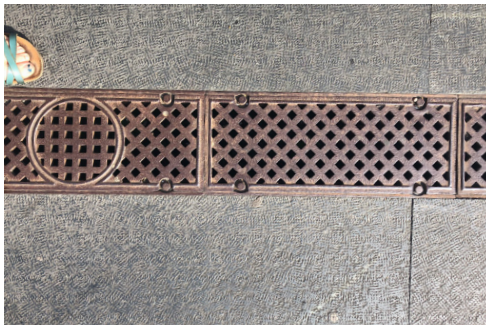


Image 4.7
Example of a linear gratings at Sheffield Station

Linear block drains

Image 4.8
Example of a linear block drains Sighthill, Glasgow

Slot drains

Image 4.9
Example of a slot drain

High capacity channel

Image 4.10
Example of a high capacity channel

Integrated kerb drainage

Image 4.11
Example of integrated kerb drainage

Open Channel and rills

Image 4.12
Example of an open channel

Open Channel

Image 4.13
Example of an open channel with a flush path crossing over it

Rainwater harvesting

Image 4.14
Example of an underground rainwater harvesting system

4.4.3 Nature based drainage solutions

Sustainable urban drainage systems and attenuation systems SuDS elements should be fully integrated into station public realm design where feasible. A combination of SuDS elements or a mix of SuDS components and traditional drainage is preferred over the use of all traditional urban drainage methods.

The edge design of such elements should be considered

Possible SuDS elements include:

1. Rain gardens/ Bioretention planters
   - Rainfall can be collected and directed into planted areas, the use of appropriate planting species is required that can tolerate wet conditions
   - Broken kerb detail or slots between kerbs to direct water from the hard surface into the adjacent rain garden

2. Wetlands, detention and attenuation ponds
   - Where space allows, larger areas may be used for attenuating water in ponds

3. Swales, open rills or gravel filter strips
   - Linear drainage elements

4. Sustainable urban drainage tree pit systems
   - Which combine storm water management with urban tree planting, so the trees direct precipitation into the ground through trunk flow and absorb rainfall through their roots

5. Green walls
   - Vertical green walls using rainwater runoff from roof systems can aid rainwater management. The design of green walls will require integration with the building

6. Permeable and porous surfacing
   - That allows rainwater to pass through the surface to the ground below to infiltrate into the soil.
   - This is useful for managing large areas of hard surfacing
   - Understanding the underlying soil type of each area is important, some soil types such as clay aren't very permeable. Permeable surfaces can still be used as a solution with impermeable soils with water piped to other areas or into a piped system
   - The open texture of permeable asphalt makes it less suitable for carriageway surfaces where there is heavy turning traffic
   - Permeable surfaces such as bark chippings should only be considered in areas within community gardens. Bark requires a higher level of maintenance and can require topping up regularly

7. Green and blue roofs
   - Both types slow down water release - a blue roof is specifically designed to collect and release water over a 24 hour period. Green roofs also provide new habitats for birds and insects

Standards Reference

The SuDS Manual, CIRIA, 2015

TGN1_14SUDS LI Technical Guidance Note – Management and Maintenance of Sustainable Drainage Systems (SuDS) Landscapes, March 2014

Non-Statutory Technical Standards for Sustainable Drainage: Practice Guidance' LASOO, 2015

Water Sensitive Urban Design in the UK, CIRIA, 2013

BeST (Benefits of SuDS Tool)' CIRIA, 2019

Rain gardens

Image 4.15
Rain gardens

Rain gardens

Image 4.16
Rain garden attenuation, biodiversity, landform, park, planting, public realm, sustainability, swale, water management

Ponds/wetlands

Image 4.17
Wetlands or attenuation ponds

Swales

Image 4.18
Linear swales Cambridge

Green walls

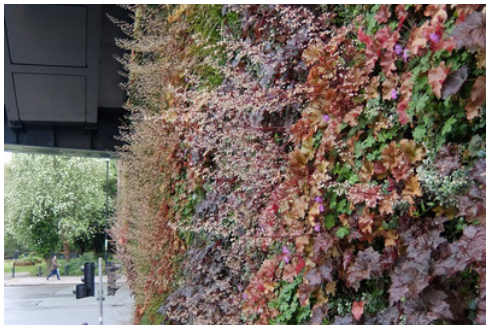


Image 4.19
Green wall

SuDS tree pits

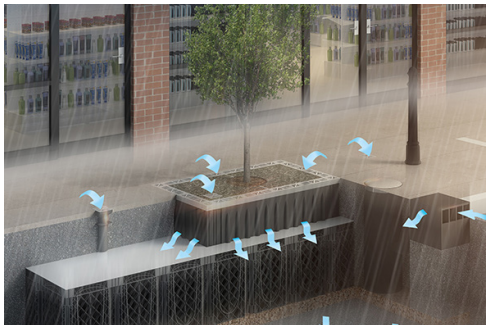


Image 4.20
SuDS tree pits Green Blue Urban

Permeable paving

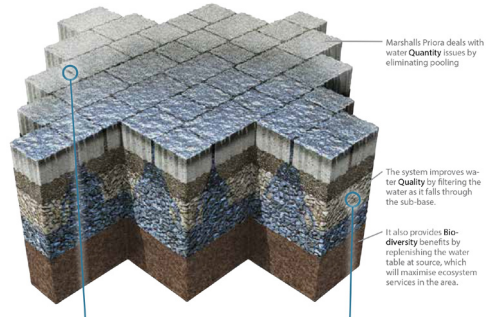


Image 4.21
Permeable paving

Green roofs

Image 4.22
Green roofs

4.5 Planting and biodiversity

4.5.1 Introduction

This soft landscaping and biodiversity section covers guidance on general principles and approach, biodiversity enhancement, proposed planting areas and proposed tree planting. Protecting existing planting and habitats at stations and introducing additional planting, trees and habitats is a key consideration for any public realm project. Planting can bring many multifunctional benefits for example reinforcing local identity, wayfinding, community involvement, wildlife, reducing water run off.

4.5.2 General principles and approach

Design team

- The design team should reflect the soft landscaping and biodiversity requirements of each project and include arboriculturist, horticulturist, ecologists, soil specialists as appropriate.

Security

- Security and safety considerations for planting and vegetation should check planting is clear of major sightlines. Planting should be well maintained and not obstruct views. Dense shrubs should be maintained to prevent obscuring sightlines and considered to avoid concealment opportunities. Tree planting and lighting should be coordinated to avoid conflicts and assure spaces are well lit.

Existing planting

- Where existing planting is present a Phase 1 habitat survey should be undertaken to understand existing biodiversity value of the project.
- A tree survey should be undertaken for any existing tree to inform future proposals, this should be to BS 5837:2012 Trees in relation to design, demolition and construction.
- Existing trees should be checked for Tree Preservation Orders (TPOs), Local Planning Authority maintains a record of their locations. Network Rail has a Tree Preservation Orders exemption and is exempt from complying with TPOs on its own land, however this privilege should only be applied to locations that are safety critical to the operation of the railways.

Standards Reference

Trees in relation to design, demolition and construction
BS 5837:2012

NR Guidance Suite Reference

Heritage: Care and Development
NR/GN/CIV/100/05 Section: 3.5 TPOs

Establishment and maintenance

- Landscape Management Plans (LMP) or Landscape and Ecological Management Plan (LEMP) should be produced for each project, setting out the long term objectives for the public realm including planting. This enables the management principles to be agreed and available to those undertaking the long term management.
- The establishment period of planting should be defined in the contractors contract.
- Engagement with local communities to form volunteer groups to help maintain planting should be explored, provision of outdoor taps for example are a great way to enable community involvement.

There are several ways planting maintenance could be approached.

- Informal arrangements with staff at small stations
- Community rail groups
- Landscape contractors, on larger projects the use of a landscape maintenance contract such as the JCLI Landscape Maintenance Works Contract (JCLI LMWC) using British Association of Landscape Industries (BALI) registered landscape contractors. The JCLI LMWC is a Standard Form of Agreement and Conditions of Contract for Landscape Maintenance Works which is appropriate for all types of 'commercial' landscape maintenance project of any value
- In some situations there may be an agreement that the council maintain some of the planting

4.5.3 Biodiversity enhancement

One of the four core priorities for delivering the Network Rail Environmental Sustainability Strategy 2020-2050 vision is for improved biodiversity of plants and wildlife. The ambition is to look after nature and protect, maintain and enhance biodiversity across the railway. Achieving no net loss of biodiversity across the network by 2024 and net gain by 2035, stretching beyond the DfT's target of Biodiversity Net Gain by 2040. The Biodiversity Action Plan (Nov 2020) sets out the approach to achieving this. The Network Rail estate has been surveyed to aid the future approach to vegetation management and understand the biodiversity value on Network Rail land and beyond. Network Rail are also working in partnership with Natural England and other organisations to support the establishment of Nature Recovery Networks across Britain.

The focus has been on lineside vegetation and biodiversity but there is real opportunity to extend this into the station public realm and connections beyond the station boundary. Biodiverse planting is a great way to enhance stations identity and biodiversity at the same time.

The Network Rail Environment and Social Minimum Requirements NR_L2_ENV_015 sets out Biodiversity requirements that all works should follow the process outlined in NR/L2/ENV/122/01 Biodiversity Manual. This includes undertaking biodiversity metric calculations and using information from a Preliminary Ecological Appraisal (PEA) and other surveys to complete the biodiversity section of the ESMP. The Biodiversity Manual NR/L2/ENV/122/01 and 02 includes requirements for managing biodiversity during works and producing Habitat Management Plans (HMPs).

Project and design considerations

- The public realm design team / landscape architect should consider any potential biodiversity impacts and what opportunities exist to enhance biodiversity
- A landscape architect working with an ecologist should assess the likely impacts and opportunities of the works on biodiversity based on the scope of the works and using any existing ecological data. They should identify any habitats that have biodiversity value, sites designated for nature conservation, protected or notable species or invasive species that require management
- A Habitat and Landscape Management Plan should be produced by the landscape architect with input from the ecologist covering the management of new, existing or enhanced features
- Projects should utilise existing data to see if improved connections between different habitats can be achieved as part of the public realm.
- Some projects may be subject to local council biodiversity net gain targets

Image 4.23
Bee Friendly Planter on East Putney Station platform

Standards Reference

Network Rail Environmental Strategy 2020 – 2050

NR Environment and Social Minimum Requirements
NR_L2_ENV_015

NR Biodiversity Manual
NR/L2/ENV/122

Network Rail Biodiversity Action Plan, Nov 2020

4.5.4 Proposed planting

Planting design principles:

- Planting should be informed by a combination of the climate and soil type and used to reinforce local identity.
- Plants should be specified to reflect the prevalent soil type
- Planting should be designed for biodiversity and for attracting wildlife and informed by seasonality.
- Planting should address climate adaption and specify plants that reduce the requirement for management/irrigation
- Planting design should balance formal and informal elements with consideration given to presenting an unkempt appearance.
- Biosecurity of plants should be considered.
- Consider use of edible plants for example fruit trees/bushes ideally with input from the local community so that fruit is harvested and enjoyed rather than dropping on the floor
- Consider use of sensory planting where appropriate

Spatial principles

- The location of planting should be coordinated with all public realm elements and informed by site requirements.
- The location and depth of soil volume should be considered, above or below ground options may provide opportunities for raised beds or integrated seating.
- Consider micro climate and the available light

Internal planting

Planting within concourse buildings will have different requirements to external planting. Regular irrigation will be required and the amount of available light considered carefully. Atocha Railway station in Madrid, Spain is a successful example that provides a tropical botanical garden experience within the new concourse.

Standards Reference

Nursery stock specifications
BS 3936

Specification for topsoil
BS 3882:2015

Image 4.24
Example of swale planting at Burgess Park, London

Image 4.25
Example of internal planting within the concourse at Atocha Railway Station, Madrid

4.5 Planting and biodiversity

Planting Type	Application	Advantages	Disadvantage
Meadows 	• Can be used at a variety of scales - although visually most successful adjacent to linear routes. • Effective boundary edge planting to paths or adjacent to hard paving.	• Plant diversity creates floral interest and attracts a variety of fauna. • Can improve air quality • Relatively low maintenance	• If too naturalistic in appearance, they can be deemed 'scruffy' and frowned upon by local communities. • They require appropriate site conditions to be implemented for example soil depth, nutrient status.
Amenity grass 	• Amenity grass useful for passive recreation • For more formal areas	• Mown lawns and edges create the sense of a 'maintained' landscape and can help to foster a more positive public perception.	• Can require additional maintenance to maintain good coverage and keep at an acceptable length.
SuDS planting 	• Rains gardens • Swales • Attenuation ponds	• Reduces surface water runoff • Plant species suited to rain gardens are appropriate that can cope with getting wet roots.	
Planted beds 	• Shrubs, grasses, herbaceous	• Colour, interest, pollinators • In raised planters or beds	• Requires some maintenance and monitoring of the design to establish long-term success.
Vertical Greening 	• On vertical surfaces • Walls • Building facades	• No floor space required • Can make use of blank facades or walls • A range of plant species can create patterns and interesting textured arrangements	• Requires maintenance and irrigation
Hedges 	• To define boundaries • To screen areas • To provide linear habitat connectivity • To reduce air pollution and improve air quality	• High biodiversity value • Can improve air quality	• High biodiversity value • Can improve air quality
Bulbs 	• Within grass areas, planted areas or meadow	• Seasonal colour and structure • Range of bulbs that flower at different times of year • Easy to plant, can involve community	

Image 4.26
Table of typical planting types

4.5.5 Approach to tree planting

Tree planting has many benefits - wayfinding, placemaking, cooling and shading, reducing water run off etc. Economic potential, Quality of place, Nature conservation and habitat connectivity, air pollution.

- Flood mitigation
- Trees provide economic benefits by adding value and reducing costs.
- Trees for cooling and shading- the magnitude of the benefit is closely related to crown size and density.
- Trees for air quality regulation
- Trees for carbon storage and sequestration
- Trees for provisioning and cultural services

Striking a balance between safety and environmental outcomes requires careful consideration for tree planting. All tree planting within the lineside of the operational rail line is subject to strict guidance in the interest of safety. Tree planting within station public realm areas located away the lineside can be more flexible in the approach to tree planting and tree species.

Lineside tree planting

- The Network Rail Tree Management NR/L2/OTK/5201 contains the requirements for the management and planting of trees.
- The Network Rail Recommended Planting Species, Species Matrix (2015) updated by The Tree Council covers lineside vegetation management and includes the types of vegetation species recommended for planting within the Network Rail infrastructure and the types of vegetation species not recommended.

Principles of public realm tree planting
Tree planting in hard paving and soft landscaping areas of the public realm should be designed to establish the long term health of trees. This reduces the likelihood of conflicts between trees, structures and people, thus providing for smoother management and reduced costs.

The following section provides information on:

- Tree spatial considerations
- Season of planting
- Tree soil volume
- Tree maintenance
- Tree species
- Tree procurement
- Tree sizes at planting
- Tree pit details
- Tree support

Tree spatial considerations
Develop an understanding of the underground and above ground constraints and conflicts. For example the location of utilities and building foundations, consider if the use of shared ducts for utilities may free up space to tree planting and avoid future upheaval. Above ground consider

- Tree planting to be in accordance with BS 5837:2012 Trees in relation to construction and BS 8545:2014 Trees: from nursery to independence in the landscape or any amendments that subsequently update these documents
- Trees should not obstruct sight lines, views, signage or building entrance ways
- Trees to be located so that seating areas in streets are partly shaded
- Tree's trunks to be located so as not to obstruct lighting columns and CCTV
- The proposed layout of tree planting should be coordinated with the services and utilities layout of a development cluster for the earliest stages to avoid conflicts later
- Landmark trees can be used to break the regular rhythm of street trees to highlight gateways, junctions, as visual connection points or improving and framing views.

4.5 Planting and biodiversity

Season of planting

- Trees should be planted during the dormant period between mid-October to March. Early planting, before the end of the year is preferred.

Tree soil volume

- The volume of soil for a new tree at planting depends on the size and species of the tree specified. The advice of a Landscape Architect that prepares the specification and nursery supplying the tree should determine the appropriate soil volume and space for the tree at the detailed design stage
- Make a 20% allowance for reduction of soil volume for each tree when two or more trees share pit or are planted in trenches
- The soil volume can be underground or above ground in planters or raised beds.

Tree maintenance

- An establishment and maintenance period for proposed tree planting should be included within any works contract to enable their success
- Establish who will be responsible for maintaining the tree planting long term
- Consider tree route disruption and spatial allowance for pruning and the use of tree guards
- Establish who will be responsible for clearing leaf litter and the methods of leaf litter removal

Standards Reference

NR Tree Management Issue 1
NR/L2/OTK/5201/04

NR Tree planting species | Issue 1

Recommended Planting Species, Species Matrix (2015)

Trees in relation to design, demolition and construction. Recommendations
BS 5837:2012

Tree work. Recommendations
BS 3998:2010

Specification for topsoil
BS 3882:2015

Trees: from nursery to independence in the landscape. Recommendations
BS 8545:2014

Nursery stock specifications
BS 3936

Forestry Commission, Right Trees for a Changing Climate www.righttrees4cc.org.uk
Trees and Design Action group guidance
www.tdag.org.uk

Image 4.27
Mature tree planting within hard surfacing at Kings Cross St Pancras

Image 4.28
Bath Spa station forecourt - use of espalier fruit trees within raised planters with integrated seating and artwork. Note: seating could be improved with provision of armrests

4.5 Planting and biodiversity

Tree species

- Tree selection should be based on species that are compatible with existing soil conditions, well established in the UK environment and suitable for proposed landscape systems i.e. SUDS.
- The planting of larger and long lived native and ornamental tree species that can provide seasonal interest and biodiversity value is encouraged; however trees should be of an appropriate scale to the context of the project.
- Trees can be a mix of species or single species, mixed species help establish resistance to future diseases and provide enhanced biodiversity value.

The table opposite is included as a tool to help specify trees.

Tree procurement

- Advanced procurement of tree stock should be considered to check successful supply.
- Local nurseries should be used where appropriate so that trees are accustomed to local conditions.
- UK nurseries are preferred sources for trees in the first instance, subject to quality and number of specimens in available to select from.

Tree sizes at planting

- Where trees are planted adjacent to streets or cycle paths, semi-mature trees with a minimum clear stem height to avoid clashes with users or vehicles should be selected
- Where trees are planted in the soft landscape or in groups, specification of smaller size trees may be used
- The size of all trees at planting should be robust to cope with their position in publicly accessible space
- Trees that are damaged or die as a result of construction related activity should be replaced by the contractor at the size stated in the specification.

Image 4.29
Example of incorporating existing trees and proposed trees within the public realm at Wharf Green, Swindon

Image 4.30
Example of a tree pit detail with recessed natural stone paving at Wharf Green, Swindon

4.5 Planting and biodiversity

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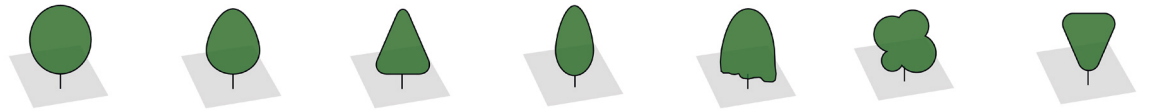
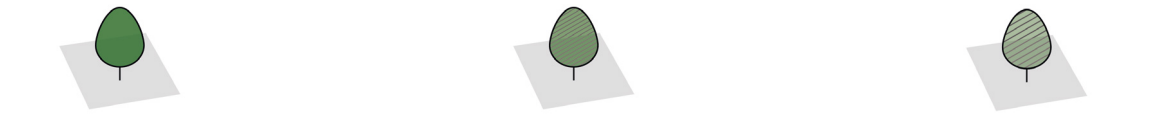
	Consider	Options
Use/Location	Consider the location,use and what benefits a tree can bring: • Can it aid wayfinding by considering the orientation or a specimen tree as a focal point? • Can it help provide storm water retention? Cooling/shade? • Can it enhance local identity? • What biodiversity can the tree provide? Is it located in paving or soil? Does it should tolerance to air pollution or coastal sea spray?	 Street tree · Focal point · SuDS · Habitat · Avenue · Grid
Size	Consider the height, canopy spread and growth rate: • Will the tree bump into anything when it is fully grown? • How wide will the tree grow? • How long will it take for the tree to reach its full height? Slow growing species typically live longer than fast growing species.	 Very large (capable of growing >25m) · Large (mature size 15-25m) · Medium (mature size 10-15m) · Small (mature size <10m)
Crown Form	Consider the form or shape: • A columnar tree will grow in less space. • Round and V-Shaped species provide the most shade.	 Globular · Ovoid · Conical · Columnar · Weeping · Irregular · Vase shaped
Crown Density	Consider how dense the canopy will be: • Will it lose its leaves in the winter? • Is there potential to trap air pollution with a dense crown? • Are there views or shading issues?	 A dense crown · A moderately dense crown · An open crown
Natural Habitat and Environmental	Consider the environment the tree requires to thrive: • Is it suitable for use in hard landscaping? • Does the tree link to surrounding habitats and provide for wildlife? Will the tree cope with the likely conditions? • What are the soil, sun, and moisture requirements for the tree? • Will the species be suitable in the future to adapt to climate change without irrigation? Is the tree susceptible to disease?	 Native · Non Native · Tolerance to shade · Tolerance to drought · Tolerance to water logging · Tolerance to disease
Ornamental Qualities	Consider what the tree looks like: • Does the tree have seasonal aesthetic qualities e.g. blossom at particular time of year. • Does the tree have fruit or sap. If the tree drops fruit will it cause an issue? Can it provide street food e.g. orchard, fruit/nuts • What type of stem does it have, multi stem or single stem? Will it lose its leaves in the winter?	 Flowering · Fruiting · Stem type · Deciduous or evergreen

Image 4.31 Tree planting table

4.5 Planting and biodiversity

Tree pit details

- All tree pit dimensions to be confirmed during detail stages in coordination with tree pit specialist and tree nursery.
- Future root growth should be accounted for by identifying suitable locations for planting.
- Tree pits design to be constructed as combined trenches where possible, allowing pits to extend below the public realm, footways and cycleways where possible.
- Tree pits should be excavated either in trench or square form and provide a sufficient growing medium for the species of tree. Tree pits should be of a suitable size to establish future healthy growth. This may be specific to tree species. Topsoil to be to BS3882:2007.
- Adequate and natural irrigation and drainage should be incorporated within the design of tree pits.
- Where there is potential for conflict between roots and underground services or potential for root damage to paving areas, suitable preventative methods such as root barriers and root deflectors should be used.
- Tree pits in hard civic spaces to be constructed using proprietary cell systems and in compliance with Highways requirements for vehicle loadings.
- Tree pits and root zones may be used as part of sustainable urban drainage system with the appropriate tree pit details.

Tree support

- The size of tree planting should be sufficient to avoid the need for added protection, such as the use of tree guards, which add clutter and maintenance.
- If tree staking is required it should be used as an opportunity to express the identity of the place.
- All trees planted within clusters should be supported with an underground guying system and fitted with approved irrigation system as necessary.

Tree pit surface material

A range of surface materials can be used depending on individual circumstances. Organic bark mulch is typically used as a surface material around newly-planted trees in soft landscape. In hard landscapes there are surface materials for example resin bound gravel, self binding gravel, grilles and rubber crumb available which should be chosen based upon the location and specific requirements of the tree.

Irrigation

Newly-planted trees will require irrigation to establish successfully and thrive. This should be included within the contractors requirements and within the LMP. This might involve hand watering or an automatic system.

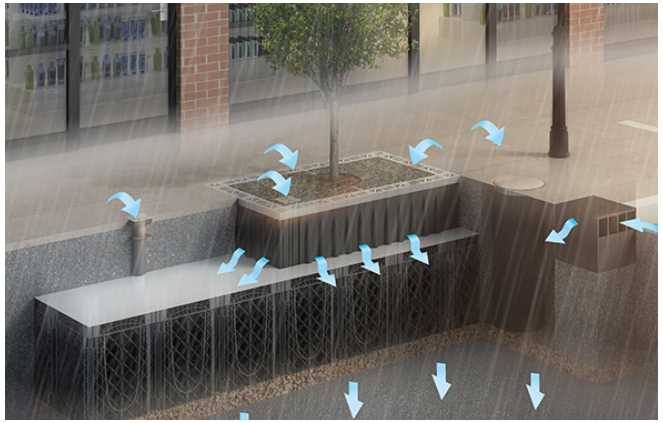


Image 4.32
Illustrative image of Green Blue Urban underground detail of a tree pit

Image 4.33
Example of a tree pit detail with metal grille

4.6 Street Furniture

4.6.1 Street Furniture Introduction

Street furniture animates the public realm, it adds character, identity and provides many functions. Successful public spaces consider every piece of street furniture and rationalise and creatively place pieces to achieve multiple aims.

There is no 'one solution fits all' for street furniture within stations, variation and bespoke solutions can be the best option for some stations whereas a standard off the shelf piece might work well in another. The approach should fit its context for both the spatial considerations of the layout and the performance specification considerations.

The impact of poorly placed or excessive street furniture can create a cluttered environment resulting in obstructions, reduced legibility and a blighted character. The aim is to provide high quality, beautiful, robust and maintainable street furniture that complements the surrounding area using 'the right product in the right place, done right'.

Performance Specification considerations

- All items of furniture and free-standing devices at stations should contrast with their background, and have rounded edges.
- Within the station confines, furniture and free-standing devices (including cantilevered and suspended items) should be positioned where they do not obstruct blind or visually impaired people, or they should be detectable by a person using a long cane
- Cantilevered items, fitted below a height of 2100 mm that protrude by more than 150 mm should be indicated by an obstacle at a maximum height of 300 mm that can be detected by a visually impaired person using a cane.

Standards Reference

Design of an accessible and inclusive built environment — Code of Practice (2018)
BS 8300-1 and 2

DfT, National Technical Specification Notice (NTSN), **Persons with Reduced Mobility (PRM) 2021** *Section 4.2.1.7. Furniture and free-standing devices*

DfT, Design Standards for Accessible Railway Stations **Code of Practice (2015)** *Section J2. Furniture and free-standing devices*

DfT, Security in the design of stations (SIDOS) July 2012

The National Railways Security Programme (NRSP): Section 7 Station Security (Restricted)

Standards for Public Cycle Parking, June 2021

4.6.2 Seating

Seating within the public realm is an important element to provide place to rest and wait. User experience, functionality, comfort and accessibility are key considerations. Seating provides the opportunity to create bespoke or individual pieces that reflect the local identity, character or community. Use of public transport usually involves waiting, so provision of seating is important.

Spatial considerations

- Locate seating in areas of natural surveillance to minimise antisocial behaviour
- Locate seating to avoid impeding access to buildings or obstructing pedestrian movement
- Locate seating with consideration to the seasonal elements and microclimate in sunny spots and away from wind tunnels
- Locate seating with consideration of the view, seating can provide places for people watching or a view to a landmark or landscape
- Seating arrangements should consider the anticipated users and their requirements, e.g. individual seating for lone travellers, table and chairs for locations where people might want to stop for food
- Locations of seating should consider inclusivity and allow for wheelchair users, buggies or small mobility scooter users to sit alongside formal seating to allow groups of people to sit together
- Disabled people require seating at reasonably frequent intervals. In commonly used pedestrian areas, and transport interchanges and stations, seats should be provided at intervals of no more 50 metres.
- Wherever possible seats should also be provided at bus stops and shelters.
- Seating should contrast to its surrounding to help people with visual impairment.

Performance Specification considerations

- Material choice to reflect location requirements for security, maintenance and character
- Seating should reflect the character and identity of the place
- Seating should be selected which combines comfort, ease of maintenance, durability and resistance to vandalism
- On each platform where passengers are expected to wait for trains, and at every waiting area, there should be a minimum of one area fitted with seating facilities and a space for a wheelchair
- Priority seating should be indicated
- Guidance on conventional seat heights varies over the range of 420- 580mm, with a median height around 470-480mm
- Armrests are helpful for some people and should be placed about 200mm above seat level
- Seat widths are recommended to be a minimum of 500mm
- For outdoor seating it is vital that rain water is not allowed to collect on any part of the seat

Standards Reference

Design of an accessible and inclusive built environment — Code of Practice (2018)
BS 8300-1 and 2

Network Rail Station Toolkit – Station seating

DfT, Design Standards for Accessible Railway Stations Code of Practice (2015) *Section T1. Seating, waiting rooms and shelters*

DfT's Inclusive Mobility, 2005

NR Guidance Suite Reference

Station Capacity
NR/GN/CIV/100/03 Section *3.3.3 Platform seating*

Heritage seating

Image 4.34
Example of restoration work to Grade II listed bench, Scarborough railway station

Off the shelf products

Image 4.35
Example of standard seating products, Reading Station

Individual seating

Image 4.36
Example of individual seating, Burgess Park

Terraced seating

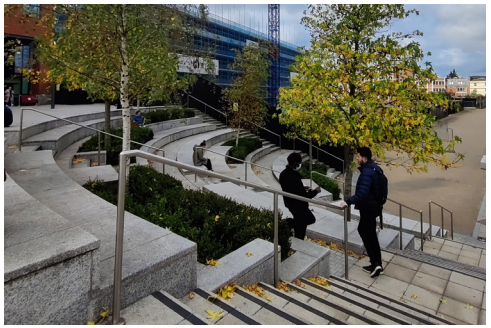


Image 4.37
Use of level changes to create terraced seating and planting, Reading Station

Table and chairs

Image 4.38
Visualisation of Euston station showing places to eat or work at tables and chairs

Smart seating

Image 4.39
Example of seating providing places to charge phones or devices

Bespoke seating

Image 4.40
Example of individual designs tailored to a project or location, Bath Spa station

Flexible seating

Image 4.41
Example of moveable seating at Streatham station

4.6.3 Shelters

Shelters within the public realm provide sheltered areas for waiting, gathering or as walkways. They may form part of the platform environment, transport interchanges and mobility hubs.

Design principles:

- Cantilevered shelters and canopies from existing structures and buildings should be considered as a first priority to assist in reducing the amount of supports and columns to reduce clutter and obstructions.
- Shelter design and location should be informed by required head height, clearances, maintenance requirements of buildings and operational vehicle access.
- Works to heritage shelters should comply with Heritage: Care and Development NR/GN/CIV/100/05 Section:6.10 Canopies
- Shelters should be located and designed with an understanding of wind direction and local microclimatic conditions.
- Natural daylight requirements, artificial lighting and drainage requirements should inform the design.
- The character and style of shelters should be appropriate to the context of the station, opportunities to reflect the local identity and to enhance placemaking should be considered.
- Use of uprights should be multifunctional e.g. wayfinding, lighting, drainage should be considered to assist in reducing clutter.
- Shelters provided by other operators such as bus stop shelters should be coordinated within the public realm.

Considerations

- Consider opportunities for incorporating green roofs
- Consider opportunities for integrated art works
- Consider the use of temporary shelters within the public realm for example for events or markets, these may benefit from agreed tie down points.
- Consider the use of covered walkways, for more information refer to Parking & Mobility At Stations NR/GN/CIV/200/11

Typical types of shelters may include:

- Cantilevered shelters or canopies
- Free standing shelters
- Interchange shelters such as for bus stops, tram stops or
- Temporary shelters
- Shelters associated with cycle parking are covered in the cycle parking section

Standards Reference

Design of an accessible and inclusive built environment — Code of Practice (2018)
BS 8300-1 and 2

DfT, Design Standards for Accessible Railway Stations Code of Practice (2015) Section T1. Seating, waiting rooms and shelters

NR Guidance Suite Reference

Station Capacity
NR/GN/CIV/100/03 *Section: 3.4 Canopies*

Heritage: Care and Development
NR/GN/CIV/100/05 *Section:6.10 Canopies*

Parking & Mobility At Stations
NR/GN/CIV/200/11

4.6 Street Furniture

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Heritage Shelter

Image 4.42
Grange station

Covered walkway shelter

Image 4.43
Wemyss Bay

Cantilevered from a building

Image 4.44
London Bridge Station

Cantilevered over parking bays

Image 4.45
High Wycombe

Shelter with green roof

Image 4.46
Manchester bus stop

Platform shelter

Image 4.47
Kilmarnock station

Cantilevered shelter

Image 4.48
Bristol Temple Meads station

Building integrated shelter

Image 4.49
London Kings Cross station

4.6.4 Cycle parking and micro-mobility facilities

The number of cycle-rail journeys in which a cycle is parked at a station has increased significantly and this is likely to rise further. There is considerable pressure on space at stations for cycle parking, and particularly sheltered and secure parking. Stations should provide best practice cycle parking that enriches the sense of place.

Cycle parking design should be designed to be fit for purpose, inclusive and secure. It should be located on cycle desire lines near the station ticket office and be well connected to surrounding highway and cycle infrastructure. Cycle parking design should follow the principles set out in the Parking and Mobility at Stations guidance NR/GN/CIV/200/11.

Where micro-mobility transport modes such as e-scooters are provided in the public realm, due consideration should be given to visibility and accessibility. Parking should be located near to the station entrance area and on routes that minimise crossover with pedestrian movement zones. They should follow the principles set out in the Parking and Mobility at Stations guidance NR/GN/CIV/200/11.

A combined approach to cycle parking and mobility facilities can be achieved through creating mobility hubs that provide a coordinated interface between different transport modes and onward travel options.

The public realm may also include various specific public realm elements relating to parking and mobility functions, for example:

- Dedicated space and equipment for cycle and scooter parking
- Charging infrastructure e-bicycles
- Parking infrastructure such as barriers, sensors, and payment machines
- Cycle equipment including stands, pumps, and maintenance equipment
- Infrastructure for onward public transport services such as bus, tram or Digital Demand Responsive Transport
- Mobility hubs which may combine a range of different components for example public transport pick up / drop off, waiting area space, cafe or community facilities with cycle parking and shared mobility facilities
- Managed kerb space for taxi and PHV pick-up/set down
- Managed kerb space for deliveries and servicing vehicles
- Information boards including digital signage

Standards Reference

Design of an accessible and inclusive built environment — Code of Practice (2018)
BS 8300-1 and 2

Standards for Public Cycle Parking
June 2021

DfT Cycle Infrastructure Design LTN 1/20
July 2020

A Guide to Inclusive Cycling, Wheels for Wellbeing 2019 (2nd edition)

DfT, Security in the design of stations (SIDOS)
July 2012

The National Railways Security Programme (NRSP): Section 7 Station Security (Restricted)

NR Guidance Suite Reference

Parking & Mobility At Stations
NR/GN/CIV/200/11

Public Realm Design
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Image 4.50
Brompton cycle hire docks at Waterloo
© Network Rail

Image 4.51
OVO micro-consolidation project, Geneva

Image 4.52
Waltham Forest cycle hubs

Image 4.53
Bristol

Image 4.54
Cycle hire

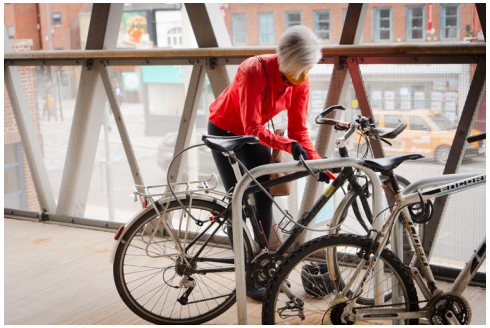

Image 4.55
Kingston Station cycle hub

Image 4.56
Geofenced on-street micromobility parking zone

Image 4.57
E-scooters micro mobility

4.6.5 Waste facilities

The approach to waste should initially aim to reduce waste by the provision of facilities or procedures to enable this. This may be refill stations, reducing disposable items or providing space for people to eat or drink their own food.

The provision of bins should cover waste from trade, retail and public waste. Well located and adequate waste provision helps provide a litter free environment. The type of bins can impact on the appearance and quality of the public realm. Sufficient capacity and the servicing of bins should be considered for each location.

Spatial principles

- Waste facilities should always be located away from entrances and main pedestrian flow routes
- The location of bins should be coordinated with other street furniture and not create an obstruction.

Security

- The relevant security regulations detail the requirements for litter bins, bulk rubbish containers, compactors and recycling facilities
- Waste facilities should comply with the security requirements in NR Station Bin Security Requirements for all Network Rail managed Category A and B stations. The document is not applicable to non-Network Rail managed stations or Category C and below stations or bulk waste management. The document may be used as guidance for these stations but is not mandated.

Performance specification

- The character and style of bins should be appropriate to the context of the station, opportunities to reflect the local identity and enhance placemaking should be considered.
- Consider the type of bin in relation to the station capacity, smart bins or underground bins may be appropriate where capacity is greater and security requirements allow
- Avoid small bins in busy locations that can overflow quickly
- Materials and finish to be robust and have good visual contrast with the surrounding background

Image 4.58
Clear sack bin

Image 4.58
Coffee cup recycling at Liverpool Street

Standards Reference

Design of an accessible and inclusive built environment — Code of Practice (2018)
BS 8300-1 and 2

DfT, Security in Design of Stations (SIDOS) Guide, July 2012

NR Station Bin Security Requirements – Issue 1

4.6.6 Planters

The use of planting and trees is encouraged as described in Section 4.5. Planters can be used within all areas of the public realm from forecourt, concourse and on platforms. Planters can take many forms from free standing planters to partially submerged and fully integrated planters. To successfully incorporate planting and trees into stations requires adequate soil volume.

Spatial design principles

- Planter should provide multifunctional uses where possible such as security features instead of bollards, incorporating lighting or seating or as part of a level change as a series of planted terraces
- Planters should always be located away from entrances and main pedestrian flow routes and coordinated with other public realm elements so as not to create an obstruction
- Planters should not create visual obstructions within the public realm that limit sight lines.

Security

- Planters should be designed so as to make it impossible to hide anything underneath, i.e. with either no gap or a gap so big that anything can be visible from all sides. Planting should not be so dense that it hinders searches.

Performance specification

- The character and style of planters should be appropriate to the context of the station, opportunities to reflect the local identity and enhance placemaking should be incorporated
- Free-standing planters can dry out quickly without regular watering, consider appropriate plant species that can withstand these conditions, management of the planting and irrigation systems that can be built into planters
- Materials and finish to be robust and have good visual contrast with the surrounding background.
- Planters can be used to incorporate art
- Consider if moveable planters can help create flexibility within the public realm

Standards Reference

DfT, Security in Design of Stations (SIDOS) Guide, July 2012

Image 4.60 Westgate Oxford planters incorporating bespoke backlit artwork

Image 4.61 Bee Friendly Trust project at Peterborough station

Image 4.62 Public realm in Wembley incorporating planted terraces, integrated seating and clear balustrade maintaining clear views

4.7.1 Introduction

Operations and communication facilities and amenities within the station public realm help with the smooth operation of the station.

They require consideration to maintain a clutter free environment whilst providing facilities in easy to use and accessible locations.

4.7.2 Postage and communication

Within the public realm there are often elements that provide services for posting, package collection and communications. For example, post boxes, parcel lockers and telephone boxes. These are operated and maintained by external suppliers/operators for example Royal Mail or parcel delivery companies.

Their location within the public realm should be considered to check they can be accessed by customers and operators. Considering operations requirements and offsets to allow enough space so as not to restrict passenger movements.

Parcels as Passenger is a recent report from The Rail Innovation Group which explores the potential for expanding the use of the existing rail network to facilitate the faster and more sustainable delivery of smaller and medium sized parcels. There may be operational and spatial considerations for the public realm to enable parcel transfer and onward travel connections.

4.7.3 Facilities

Information Points, Ticket Offices, Ticket Vending Machines, Waiting Areas form a part of the public realm at stations. Their location and use should be considered and have a consistent design approach as described in NR/GN/CIV/200/03 Station Facilities & Amenities Design Manual.

4.7.4 Passenger Navigation

Customer Information Systems and advertising for example often form a part of the public realm at stations. Their location and use should be carefully considered and have a consistent design approach as described in NR/GN/CIV/200/03 Station Facilities & Amenities and NR/GN/CIV/300/01 Wayfinding Guidance.

4.7.5 Station Amenities

Water fountains, charging points, vending machines and smoking areas often form a part of the public realm at stations. The location and use should be considered and have a consistent design approach as described in NR/GN/CIV/200/03.

Image 4.63
Post box located as part of the public realm arrival forecourt area at Cardiff station

Image 4.64
Kiosks within the concourse public realm area at Glasgow station

4.7.5 Stalls, kiosks and pods

Market stalls, kiosks and pods within the public realm at stations provide information or places to stop and eat or buy food and drink to takeaway. These vary from permanent fixtures to pop up kiosks or stalls. The requirements and location should be considered as part of the public realm.

Accessibility should be a key consideration, for example including low counters. Locations should be carefully considered to check movement zones aren't obstructed. Access requirements for deliveries should be considered for spatial and operations implications to the public realm.

Image 4.65
Luggage trolleys located adjacent to movement zones at Glasgow station

4.7.6 Utility cabinets/boxes

Utility cabinets are often located above ground to minimise installation costs and provide convenient access for maintenance. They can create unnecessary obstructions and clutter within the public realm, reducing space for people. They can have a visual impact on a space and should be coordinated and considered to reduce these potential impacts.

Spatial design principles

- When utility companies look to introduce new cabinets they should coordinate the location with the design team.
- Cabinets should not obstruct movement zones.
- Cabinets should consider security requirements.
- If located within a planted area adequate hard standing should be provided for access and maintenance.
- Doors should open in a way that allows safe operation of the cabinet and working areas to consider access requirements when in use.

Design principles

- Utility companies should be encouraged to use cabinets of a consistent and simple design.
- In prominent locations bespoke covers or finishes should be considered to reduce the visual impact of the utility cabinet.
- Consider the use of anti-graffiti finishes to facilitate the removal of graffiti and fly posters

Standards Reference

Design of buildings and their approaches to meet the needs of disabled people (2018)
BS 8300-1 and 2

NR Guidance Suite Reference

Station Facilities and Amenities
NR/GN/CIV/200/03

Wayfinding
NR/GN/CIV/300/01

Station capacity guidance
NR/GN/CIV/100/03

4.8 Boundary Treatments

4.8.1 Introduction

Boundary treatments are used in many forms across stations, they provide security and define areas.

The type of boundary treatment can impact on the appearance and quality of the public realm. Inappropriate fencing or walls can seriously impair the appearance of a station and the first impression passengers see of a place. Both security function and aesthetic quality can be achieved with consideration of the approach and the choice of materials.

This section covers the use of fences, railings, walls and gates, bollards and entrance barriers. Information on planting and hedging that may be used in combination with these is covered in section 4.5.4 Proposed planting.

4.8.2 Fences, railings and walls

Spatial principles

- Barriers should be considered within the context of the whole public realm rather than in isolation, consider planting and landscaping in combination.
- Consider the security needs for a barrier, could a natural feature provide the required security such as a thorny hedge or swale
- Consider the location of the fence, railing or wall and where it can be viewed from, the visual impact of a back of house fence might be very prominent when viewed as a passenger from a train
- Palisade fencing should not be used in areas of high visibility. Alternatives to palisade fencing include welded round or square bar fencing, weld mesh fencing, paladin type fencing system. Hedging can provide an attractive means of enclosure which can often be visually appropriate where a fence would not
- Visibility through any linear barrier should be considered, maintaining visual connections between station areas can help aid passenger navigation and maintains natural surveillance and surveillance from buildings and CCTV
- When barriers are proposed near existing trees care needs to be taken not to damage the roots
- The character of the fence should reflect the local identity. Explore opportunities to use local materials for example using local natural stone for walls
- Consider opportunities to integrate art into fences, railings and gates
- Historic fences, railings and walls should generally be repaired rather than replaced (consider any implications if located within a conservation area)
- Access gates and any change of boundary treatment should coincide with a feature or logical point
- Material should be robust and appropriate timber should be certified and responsibly sourced
- Temporary fencing should only be used to protect areas of the public realm in special scenarios such as cordoning off areas for repair, event management and protecting new planting

Standards Reference

DfT, Design Standards for Accessible Railway Stations Code of Practice (2015)

Design of an accessible and inclusive built environment — Code of Practice (2018)
BS 8300-1 and 2

Public Realm Design
Guidance for Stations
NR/GN/CIV/200/10
March 2022

Image 4.66
Heritage Railings

Image 4.67
Timber fencing

Image 4.68
Signage incorporated into cast concrete wall at Victoria Park

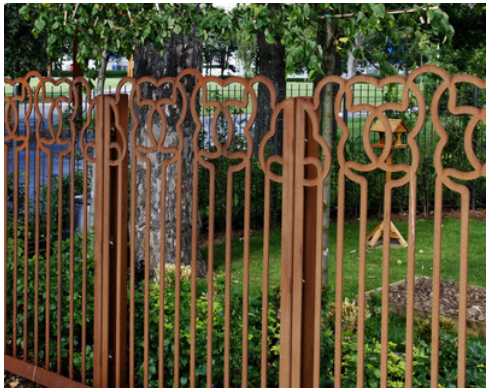

Image 4.69
Bespoke fencing with incorporated artwork at Hull

Image 4.70
Bath Spa wall incorporating local stone and artwork

Image 4.71
Entrance gateway with bespoke artwork relating to local context at Burgess Park

Image 4.72
Fencing, automatic gate in combination with hedge planting

Image 4.73
Hackney Wick station glass wall detail and cast concrete with incorporated artwork

4.8.3 Bollards

The use of excessive bollards can create a cluttered public realm and cause hazards for visually impaired people. Their function is normally to discourage or prevent vehicles from accessing pedestrian or cycle areas and from causing damage by over running onto weaker footway surfaces or over basements.
They help reduce the risk of pedestrian injury however they should be used as a last resort, other ways of providing protection should be considered as alternatives before the use of bollards. If existing bollards are in place, investigate their historic impact to understand whether some could be removed.

Alternatives to bollards
- The layout of the vehicle access alignment can be designed to reduce impact areas
- Street furniture may be able to perform the function of a bollard e.g., seating, tree planting, cycle stands
- High kerbs
- Enhanced enforcement to deter vehicle overrun
- Reinforced areas to prevent damage to areas prone to overrun
- Water features

Types of bollards
- Footway bollards - Historic or existing bollards
- High security bollards – to provide Hostile Vehicle Mitigation (HVM) protection, refer to section 3.5.2 for HVM information
- Removable bollards – locked drop down for access
- Automatic rising bollard – regular access
- Integrated bollard mounted signage - Bollards which have a sign are classed as 'traffic bollards' and provide low level traffic signage through the use of permitted directional and pedestrian/cycle signs.

Spatial principles
- The use of bollards should be minimised and integrated so as to reduce clutter.
- The arrangement of bollards should aim to minimise physical clutter while maintaining an appropriate defensive line
- Consider the alignment, locating bollards to align with other street furniture or trees may reduce the amount required
- Consider filtered permeability requirements that allow cycle access but restrict motor vehicles with an understanding of what essential access is required for example fire access
- Bollard placement standards, spacings and dimensions to prevent access should be determined by the safety and security requirements.
- Heritage or conservation teams or officers should be consulted when considering the removal or reuse of historic bollards.

Performance specification principles
- Bollard material and specification should be selected based on its contextual response to its location and its physical and visual requirements.
- The design of bollards should be appropriate to the character and identity of the area and contribute to placemaking. Some stations have historic bollards which may be listed or require repairing rather than replacing. Material options include timber cast iron, steel and aluminium.
- Removable posts may be required in some locations to restrict access but allow servicing. Electronic rising bollards should only be used where they can be well maintained, drop posts with a lock are preferred
- Bollards should include tonally contrasting banding for visibility
- Some bollards may integrate signage or lighting
- Installation - The method and detail of ground fixing should consider minimising damage to the surrounding surface in the event of a collision and the ease of replacement
- Bollards should not be linked with chain or rope
- Bollard sleeves can be used in sensitive areas on security bollards
- Bollards should include domed tops to prevent litter being left on the bollard in busy pedestrian areas

4.8 Boundary Treatments

Image 4.74 Blackfriars historic bollards

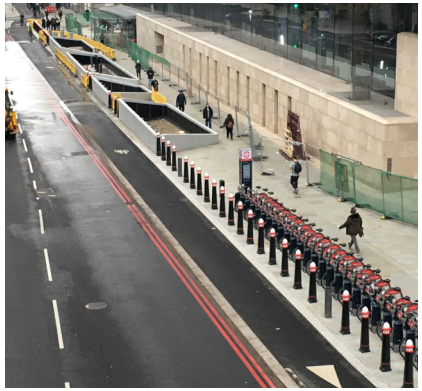

Image 4.75 New integrated bollards and planters

Image 4.76
Kings Cross High Security Bollards (note the patterned paving used can cause visual distress to some passengers)

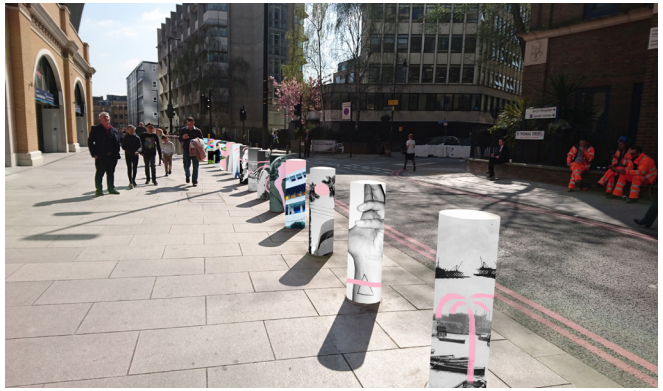

Image 4.77
Dressed bollards along St Thomas St with artwork by Jennifer Abessira to create a swath of colour along the southern entrance to the brand new station concourse at London Bridge

Standards Reference

DfT, Design Standards for Accessible Railway Stations Code of Practice (2015)

Design of an accessible and inclusive built environment — Code of Practice (2018) BS 8300-1 and 2

Image 4.78
Rising bollards at London bridge entrance

Image 4.79
Bollards at Corby station

4.8.4 Entrance barriers

At station entrances there are often barriers to prevent uncontrolled access. These are gates that allow stations to be shut out of hours and automatic ticket gates (ATG) for checking passenger tickets.

A considered approach can allow for successful integration into station entrances as part of a building line and the public realm.

Entrance gates
When planning and designing entrance gates consider the permeability and visual obstruction they create when shut. Gates that allow line of sight through them are preferred as it provides an open front door arrangement. This is beneficial in emergency situations where staff can continue to communicate through a secured locked gate.

Examples of such gates include collapsible gates or bespoke metal gates such as at Glasgow station.

Entrance gates provide an opportunity to incorporate local craft or artwork to enhance the identity and placemaking.

Ticket gates
When planning for automatic ticket gate (ATG) installations refer to RIS-7701-INS Rail Industry Standard for Automatic Ticket Gates at Stations.

It is necessary to consider the impact they may have on the safe and efficient operation of stations. Designs should take account of the requirements for passenger flow capacity, overcrowding and congestion, emergencies, the number required and signage.

The public realm should be designed to reduce the visual impact for example using a continuous material palette on either side. The location of ticket gates should be coordinated to confirm sufficient space on either side when people are waiting to get through the gates. Future technology may reduce the need for gates in a ticketless environment.

NR Guidance Suite Reference

Station Capacity
NR/GN/CIV/100/03 Section 3.2 Revenue Protection and 3.6 Station Entrances and External Areas

Standards Reference

RIS-7701-INS Rail Industry Standard for Automatic Ticket Gates at Stations Issue 1 March 2011

Image 4.80
Ticket gates at Reading station

Image 4.81
Bespoke entrance gates at Glasgow station

4.9.1 Wayfinding

The approach to wayfinding is set out in detail in the Network Rail Wayfinding guidance manual NR/GN/CIV/300/01. It outlines the objective of the signage and wayfinding designer is not to add more words, signs or clutter into spaces but instead to work collaboratively with those responsible for the station layout to design spaces in which people can intuitively navigate.

Signage is not the only way people use to navigate spaces. The approach to planning the public realm and the elements within it can help aid navigation. The use of trees, orientation of spaces, lighting, landmarks, landscaping and public art all play their part.

Planning intuitive spaces requires:

- A layout which provides clear sight lines toward entrances, exits, and vertical circulation cores
- An understanding of how the layout of spaces affects pedestrian circulation
- A clear pattern of routes and hierarchy of routes through spaces
- An understanding of how finishes, lighting and subtle design cues may guide people's movement more powerfully than a written message

4.9.2 Incorporating a wayfinding strategy

A wayfinding strategy for a station will look at mapping user flows and decision points to understand how people find their way through a space or station.

This looks at movement, decision points, opportunity spaces and dwelling spaces. Once established signage locations can be pinpointed and planned. The strategy for signage should then be used by the public realm designers to coordinate all elements within the public realm. This provides the opportunity to reduce clutter and coordinate other items such as street furniture, drainage and paving.

There may be times when local signage or information systems should be incorporated into the public realm.

Standards Reference

Design of buildings and their approaches to meet the needs of disabled people (2018)
BS 8300-1 and 2

Station Wayfinding Design and Assurance
NR/L2/CIV/150

NR Guidance Suite Reference

Wayfinding
NR/GN/CIV/300/01

Image 4.82
Signage located within planting areas at Birmingham New Street station

Image 4.83
Local signage and information system incorporated into the public realm at Bath Spa station

4.10 External Lighting and CCTV

4.10.1 Lighting

External lighting provides a safe and attractive environment for night-time users of a station. It can enhance the public realm and extend the night time economy of an area as well as reduce personal injuries, reduce crime and fear of crime.

By providing a well-lit after-dark environment it encourages walking and cycling as active transport choices throughout the day and night and helps promote the use of local facilities and amenities. The use of lighting is also beneficial for CCTV operations.

Lighting principles

- As part of the design process a lighting designer should be appointed to provide technical advice
- Consider environmental impacts of lighting, light pollution should be avoided. The use of uplighters should be avoided unless the light is contained
- Consider the sustainable use of energy and energy source, can energy generated on site be used?
- Consider wildlife and lighting levels for example some stations may be located in areas with protected species where reduced light levels are beneficial
- All luminaries to be selected to provide sufficient optical performance for the location, and to limit light pollution and glare

Spatial principles

- Column spacings to be regular and informed by appropriate light levels
- Clutter within the public realm should be reduced by minimising the number of columns, coordination with other features such as building mounted lighting should be explored
- Columns and tree planting should be coordinated to confirm foundations do not impede on tree roots and foliage will not obscure light
- Lighting columns should be positioned to align with street furniture and utility corridors

Lighting levels

- The illuminance level of the external areas of the station should be sufficient to facilitate way finding and to highlight the changes of level, doors and entrances
- The illuminance level along obstacle-free routes should be adapted to the visual task of the passenger. Particular attention should be paid to the changes of levels, ticket vending offices and machines, information desks and information displays

Security

- Adequate lighting is required for CCTV to facilitate face recognition and enable a safe and secure environment
- Confirm sufficient street lighting on routes, not obstructed by trees or other vegetation

Maintenance access

The maintenance of all lighting should be considered at an early stage and coordinated within the public realm to confirm safe access when maintenance is required.

Inclusive design

- Lighting systems should be designed to maintain a level of illumination that is suitable for blind or visually impaired people and is compatible with electronic and radio frequency installations.
- Lighting should be designed to avoid creating glare, pools of bright light and strong shadows
- Uplighters with a light source at floor or low level should not be used as they cause glare and obscure vision
- Any vertical lighting elements should include contrasting visibility bands

Heritage Lighting

Where original fittings exist, and can be adapted to current operational requirements, they should be considered for rewiring and re-lamping in a sympathetic manner. The design of light fittings should be individually tailored to the location.

Attachments

Additional attachments such as banners, hanging baskets, CCTV cameras should be coordinated.

4.10 External Lighting and CCTV

Station areas

- The platforms should be illuminated according the specification referenced. DfT, National Technical Specification Notice (NTSN), Persons with Reduced Mobility (PRM) Jan 2021
- Station forecourt lighting should be in accordance with BS 5489-1 Code of Practice for the Design of Road Lighting Part 1 and BS EN 12464-1 and 2 Light and lighting - Lighting of work places Part 1 and 2

Emergency lighting

- Emergency lighting should provide sufficient visibility for evacuation and for identification of fire-fighting and safety equipment and should be in accordance with BS 5266-1 Emergency Lighting Part 1

Types of lighting

- Existing and Heritage lighting
- Lighting columns
- Feature lighting - low level lighting integrated to street furniture and uplighting of trees
- Specialist lighting - high mast and catenary lighting
- Emergency lighting
- Facade lighting

NR Guidance Suite Reference

Wayfinding
NR/GN/CIV/300/01

Standards Reference

Design of an accessible and inclusive built environment — Code of Practice (2018)
BS 8300-1 and 2

DfT, National Technical Specification Notice (NTSN) Persons with Reduced Mobility (PRM) Jan 2021
Section 4.2.1.9

DfT, Design Standards for Accessible Railway Stations Code of Practice (2015) Section H1

Code of Practice for the Design of Road Lighting Part 1: Lighting of Roads and Public Amenity Areas
BS 5489-1

Light and lighting - Lighting of work places Part 1: Indoor work places, Part 2: Outdoor work places
BS EN 12464-1 and 2

Emergency Lighting Part 1: Code of Practice for the Emergency Lighting of Premises
BS 5266-1

Rail Safety and Standards Board (RSSB) Standard for Lighting at Stations
RIS-7702-INS

Image 4.84
Cambridge station facade lighting

Image 4.85
Birmingham New Street lighting

4.11 Art, Culture and Events

4.11.1 The Opportunity

The inclusion of art, culture and events within the public realm is an opportunity to enhance placemaking and local identity. These can be physical elements, hidden infrastructure that aids events to easily take place or just a space designed in a flexible way that provides the space for gatherings.

Image 4.86 Fox Park viaduct artwork Easton, Bristol - five local artists and artist groups covered up graffiti with a range of new vibrant artwork. Network Rail and Severnside Community Rail Partnership jointly commissioned the pieces. Each piece has been focused around a different theme, including promoting sustainable travel and bringing communities together.

4.11.2 Art in Stations

Public Art provides an opportunity to contextualise a place. Good art often engages with the station and our environment. It responds to, reacts to or challenges the context, enabling those using the space to see it with fresh eyes.

The Station Design Guidance provides information on Art in Stations covering:

- The requirement for a clear brief that allows flexibility
- Commissioning art early in the design process
- Sourcing artists
- Setting a Budget
- Coordinating Art and Architecture
- Reflecting the community and local context in Art
- Involving the community in Art

This is relevant to art within the public realm. Other elements that may require consideration on public realm projects include

- Existing artwork, statues or monuments
- Coordinating proposed Art and Public Realm

4.11.3 Existing artwork, statues and monuments

Railway stations are home to a number of valuable statues, sculptures and monuments. Such items should be fully protected during building operations. Specialist advice should always be obtained prior to any cleaning or if it is necessary to move an item to facilitate building works. Refer to Heritage: Care and Development guidance.

Image 4.87 Bronze statues of Ken Dodd and Bessie Braddock at Liverpool Lime Street Concourse. Unveiled by Ken Dodd in 2009. Sculptor Tom Murphy. The statues were removed whilst renovation works took place.

4.11.4 Coordinating proposed Art and Public Realm

Similar to coordinating Art and Architecture, Art and the Public Realm require coordinating and considerations should include:

Spatial principles

- Is the art standalone, applied to a building facade, fully integrated or of a temporary installation or event? The approach taken should affect the degree of coordination required between the Artist and Public Realm and Station Designers.
- Integrated art can be part of the floorscape or street furniture which have to meet other technical criteria, for instance slip resistance or a specific design life.
- Temporary art can be installations, events, programme of talks or workshops or interactive and digital art. Refer to events section for information on event infrastructure.
- The location of art should not obstruct movement zones.

Identity and community

- Can the local context and culture inspire the art.
- Can local materials or traditions be used?
- Can the art engage with the local community, local experiences, memories or use local artists.
- Refer to Station Design Guidance for more information.

Performance specification

- Art within the public realm in external locations should be durable and sufficiently robust to fair well in all weather conditions and resist vandalism or misuse.

Maintenance

- The long term maintenance of art should be considered as part of the process.

NR Guidance Suite Reference

Station Design Guidance
NR/GN/CIV/100/02 (Section 3.9)

Heritage: Care and Development
NR/GN/CIV/100/05 (Section:6.1)

Image 4.88 Paddington Bear statue by the sculptor Marcus Cornish, Paddington

Image 4.89 Bollards dressed with artwork by Jennifer Abessira, London Bridge

Image 4.90 Poignant trees by artist Anu Paten in memory of the victims of the Birmingham Pub Bombings, Birmingham New Street

4.11.5 Event Infrastructure

Some stations may have the potential to host events and the provision of event infrastructure can aid this. This allows planned events to be held in areas of the public realm with easy access to facilities such as power sockets, water supply, toilets connections, fixing points and signage.

The approach to event infrastructure within the public realm should confirm all elements are coordinated and spaces remain flexible.

- Event infrastructure should be integrated and not obstruct day to day activities
- The type of paving and the loading requirements should be assessed, reinforced areas for HGV overrun may be required or for where generators may be located
- Access arrangements for larger vehicles such as pop-up food stalls or stages should be analysed, can they access the space safely and turn easily
- Ground fixing points may be required, any fixing points should not create trip hazards
- Access to electricity and water supply should be planned, external access may be provided on building facades or integrated into flooring. The long term maintenance of any pop up power should be considered, hand operated systems are favoured over electronic systems that can fail and cause obstructions or be costly to repair
- Connections to sewage systems to allow for extra toilet facilities for event capacity may be required
- Use of banner mounts on existing street furniture such as lamp columns or buildings
- Consider any requirements for storage of event equipment for example gazebos or extra seating
- Consider security and safety implications of any events and if anything can be incorporated into the public realm to enhance this
- A documented plan or details of all designed infrastructure should be produced so that station managers or event organisers are aware of the provision and requirements
- Design solutions should address offsite events which may draw large volumes of people through the station.

4.11.6 Unplanned events and emergencies

Not all events are planned, the public realm is often the location for holding a large capacity of people in emergencies. Refer to the Station capacity planning guidance. The design of any public realm should check emergency evacuation routes and areas are accessible for all and relate to the required capacity.

NR Guidance Suite Reference

Station Capacity Guidance
NR/GN/CIV/100/03

Inclusivity
NR/GN/CIV/300/04

Image 4.91
Temporary market event within the public realm at Castle Green, Taunton

Image 4.92
STEM Learning Pop up event

4.11.7 Community facilities

Elements that enable community activities and engagement at stations may include:

1. Playful elements for all ages
   Making travelling by train an easy and enjoyable option for parents and families by creating engaging stations for children can help influence changes in travel choices and inspire the next generation to use sustainable travel. For example there may be opportunities for playful elements within the forecourt or concourse such as the Paddington Bear bench and statue at Paddington station or the 93/4 Platform and Harry Potter trolley. Playful elements may be integrated within the floorscape, on facades, using playful planting or in collaboration with artists to offer many different sensory and fun elements. Child scale furniture with activity stations for colouring in or places for photo opportunities are other ways to introduce playfullness. Any formal play features should comply with relevant British standards.

NR Guidance Suite Reference

Station Capacity Guidance
NR/GN/CIV/100/02

2. Community gardens
   Space for community gardens, sensory planting beds or edible planting that can be harvested by the community are all ways in which the community can be involved at stations. Facilities such as outdoor taps, a noticeboard and a place to store garden tools can enable this to happen. At Bottesford station the Bee Friendly Trust worked with the Poacher Line Community Rail Partnership, East Midlands Trains, Bottesford Parish Council and Lincolnshire County Council to transform an area of overgrown and neglected space into a sensory wildlife garden, for residents and commuters – and pollinators – to use and enjoy. The garden was part funded by Grow Wild and received the Community Rail Award for Most Enhanced Station Buildings and Surroundings 2019.

3. Music
   Space for informal musical performances can enliven stations. Selhurst station is one of several small stations in London with a public piano. There are two pianos at St Pancras, located at either end of the station's main arcade of shops.

4. Book swaps
   Space for community interventions such as book swaps.

Image 4.93
Harry Potter 93/4 trolley at Kings Cross station

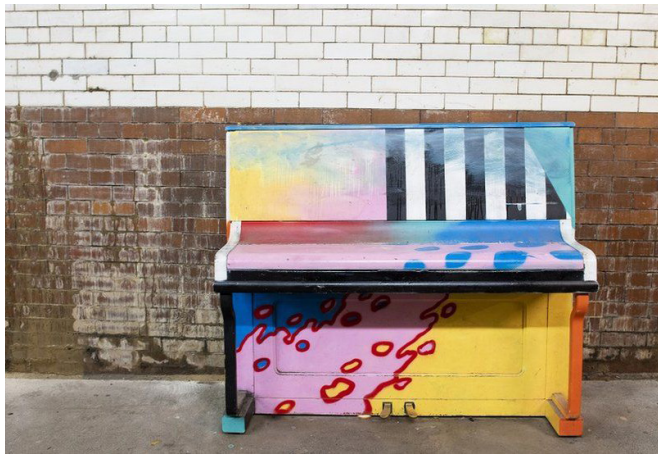

Image 4.94
Selhust station community piano

Image 4.95
The Paddington Bear statue at Paddington station is a playful and cultural element within the public realm that makes visiting the station fun for all ages. It is where Paddington was first found by Mr. and Mrs. Brown when he arrived in London from Peru and also the reason he got his name

Public Realm Design Guidance for Stations

Case Studies

A

Image A0.1
Planter with bee hotel on Peterborough Platform
The first of a series of projects by
the Bee Friendly Trust with London
North Eastern Railway

Case Study
Approach

The case studies contained within this document aim to illustrate successful examples of Public Realm at Network Rail Stations. Isolating the precise success factors of the public realm in a quantifiable way is almost impossible, and so the case studies selected illustrate a range of public realm considerations across a variety of station scales and locations that contribute positively to their environment and function.

The adjacent table sets out the case studies included in this document, including the station category (ranging from A-F with A being the largest) and their respective principle public realm considerations.

An additional list of stations for reference has been provided in the lower table. These are stations where the public realm demonstrates a number of design considerations well that design teams may wish to refer to, but case studies have not been produced within this document.

Principle Considerations for Public Realm

Case Study no.	Station Category	Station Name	Passengers	Environment	Placemaking	Community	Interchange	Commercial
1	E	Accrington Station		●	●			
2	C1	Bath Spa Station	●		●		●	●
3	A	Birmingham New St Station Living wall	●	●	●			
4	F2	Bottesford Station		●		●		
5	E	Hackney Wick Station	●		●		●	
6	A	Liverpool Lime Street Station	●		●		●	●
7	(N/A)	Meridian Water Station	●	●	●	●		●
8	A	Reading Station	●	●	●	●	●	●
9	B	Sheffield Station	●		●		●	●
10	C1	Swansea Station	●		●			
11	(NA)	Wemyss Bay Station			●		●	●

Additional stations for reference

Station Category	Station Name	Passengers	Environment	Placemaking	Community	Interchange	Commercial
(N/A)	Atocha Railway station, Madrid		●	●			
(N/A)	Barneveld Noord, Utrecht, Netherlands	●		●		●	●
A	Birmingham New Street Station	●	●	●		●	●
C2	Cromford Station		●	●			
(N/A)	Glasgow Central Station	●		●			●
(N/A)	Groningen Station, Netherlands			●		●	
(N/A)	Houten Railway Station, Netherlands					●	
A	King's Cross Station	●		●		●	●
F1	Llandovery station				●		●
E	West Hampstead Thameslink Station			●	●	●	●

* (NA) : Station uncategorised

Case Study
Accrington Station

Introduction
Accrington Station (opened 2010) is a small station built as an eco-station case study. It is constructed from locally sourced and recycled stone, reclaimed aggregates, crushed glass, recycled plastics and other sustainable materials.

What were the key design challenges?
The Accrington project was a new build and allowed the design team to look holistically at the design, construction and operation of the building from first principles. It also allowed the design team to look at how it could integrate the station within the local context, to improve the visibility of the railway and to create a more welcoming environment for passengers. For the design team there were the additional challenges of designing a building that saved energy, water and material resources; that went beyond the requirements of British building regulations and would achieve a BREEAM Excellent rating.

The process to overcome the challenges
So that the station fitted into the local environment the design team used, as far as possible, reclaimed materials especially local stone from buildings being demolished in Accrington. The use of reclaimed stone fitted well into the locality as the station is adjacent to the town centre conservation area.

Material selection was an important consideration as part of the effort to reduce the carbon footprint of the building, both during construction and in its subsequent operation. Energy conservation was, therefore, an important element of the design of the new station building. Through active design solutions such as solar panels, rainwater harvesting, solar hot water and passive design, the building achieved energy savings of 20% per annum. This went beyond the British Building Regulations at the time (in 2009).

What makes the Public Realm a success?

Placemaking: The application of local stone in the public realm integrates the site with the historical part of the city. Through the use of locally sourced materials, transportation costs in relation to construction were also reduced.

Environment: The station exemplifies the use of green technologies such as rainwater harvesting, grey water collection, solar hot water generation and photovoltaics.

What could be improved?
More a lesson learnt than a design improvement, using reclaimed stone of varying sizes and shapes proved quite a challenge for the contractor as the team were unfamiliar with how to shape stone. It is important that the contractor has the necessary workforce to manage the materials being used in the building.

Image A1.1 Accrington Station Platform before

Image A1.2 After image showing the intervention of passenger shelters and a well maintained platform surface.

Accrington Station

Image A1.3 Accrington eco-station drop off and exterior showing the facade of locally sourced and recycled stone. Lighting columns ensure visibility in the drop-off concourse at night.

Who were the design team?

- Strazla Bright Seed Architects
- Halcrow Yolles (M&E design)
- Cyril Sweett (QS)

Image A1.4
Accrington Station Entrance and cycle parking provision

Case study
Bath Spa Station

Introduction
Bath Spa Station is a Grade II listed building, serving the World Heritage City of Bath in the South West of England. A new station plaza integrates Bath Bus Station and South Gate shopping centre, acting as the key organiser for multi-modal travel and providing connections with local pedestrian and cycle routes.

What were the key design challenges?
The key design challenge for the concourse design was working in an occupied building of listed status within a busy rail environment. Outside the station the frontage needed to provide an engaging, flexible space fronting onto Brunel Square. The design needed to accommodate increased capacity and footfall whilst also considering public safety and hostile vehicle mitigation, without degrading the quality of the public realm.

The process to overcome the challenges
The design response at Brunel Square has provided Bath Spa Station with a flexible, coherent public realm which encourages people to dwell amongst verdant seasonal planting. The designers used a considered approach to the design and arrangement of furniture within the square to reduce the need for extensive hostile vehicle mitigation (HVM) elements such as bollard lines and barriers.

Image A2.1 Brunel Square in the forecourt of Bath Spa station. Passengers are encouraged to dwell by the seasonal planters that offer seating, these would benefit from armrests for improved accessibility. Wayfinding is strategically placed, offering clear direction beyond the station boundary into the Town Centre.

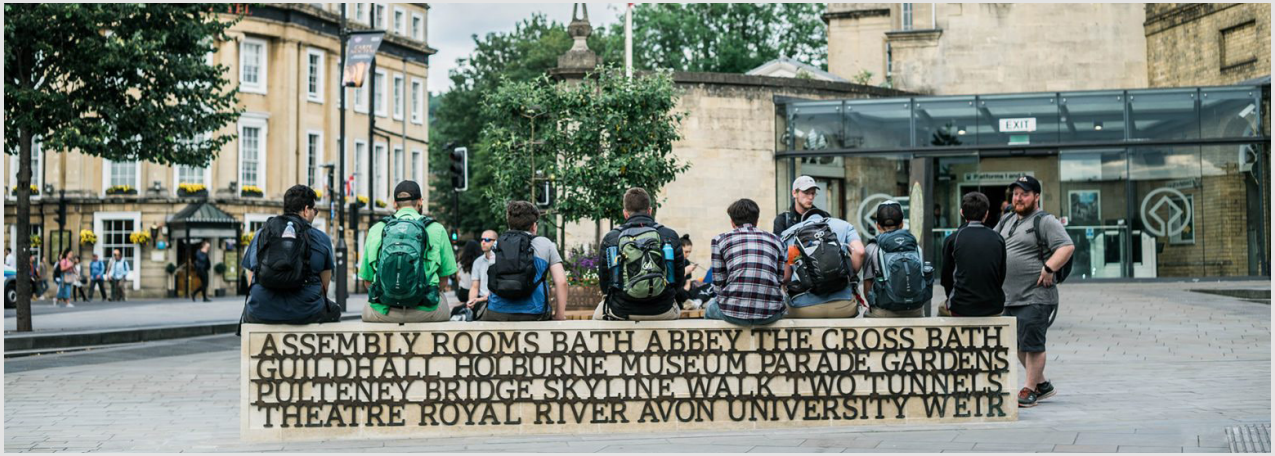

Image A2.2
Station identity and seating in the forecourt.

Image A2.3
Concourse showing successful integration to a listed building.

Image A2.4
Bath Spa Station at night: well lit but not over lit. Seating would benefit from armrests for improved accessibility

Within the Station itself the works were carefully programmed and early on-site meetings with the conservation officer were undertaken as well as early engagement with the Station Manager and Network Rail technical team.

To add a unique identity, handcrafted bronze script is incorporated into the planters and surfaces, based on a Theme of ‘an A-Z of what Bath means to me’ which was formulated through engagement of the design team with the Holbourne Museum and local primary schools.

Bath Spa Station

What makes the Public Realm a success?

Interchange: The forecourt is comprehensively developed with extensive cycle parking, clear, uncluttered, well lit routes and sheltered bus stops promoting inter-modal transport.

Placemaking: The public realm is flanked with arches, opened up and celebrating the heritage value of the architecture. The use of local Bath stone enhances identity and art work referencing the wider city is integrated in public realm elements.

Commercial: The forecourt provides opportunities for tenanted retail and establishes contextual links with the local economy as well as providing passive surveillance. Space is provided for pop up and temporary use.

Passengers: The public realm provides a welcoming and inclusive forecourt for a wide range of users including commuters and tourists. Lift access to all platforms and step free access to the concourse provides accessibility to all. Circulation areas have been enlarged including modified platforms with a reduced gap between the train and the platform whilst maintaining the existing canopies for shelter. Seating and wayfinding has been provided throughout the public realm, contributing to a positive passenger experience.

Image A2.5
Forecourt space used for pop up and temporary use with an umbrella installation and deckchairs

Bath Spa Station

Image A2.6 Aerial view of Brunel Square showing retail units interacting with station forecourt and public seating whilst keeping clear routes through to the station entrance on the right hand side

What could be improved?

The leasing of the units around the plaza has been criticised by the Bath Preservation Trust for letting to national traders, diluting local distinctiveness and attractiveness which negatively impacts the visitor experience to Bath.

Working within the constraints of a listed building means that passenger flow does not always allow for optimum arrangement. Armrests on the tree seating would improve accessibility.

Awards

- Best Medium-Sized Station and Overall Best Station (International Station Awards, 2013)

Who were the design team?

- Macgregor Smith, Public Realm (Brunel Square)
- WilkinsonEyre, Architects (Forecourt)
- Oxford Architects, Architects
- Proair Consulting, M& E
- Scott White Hookins, Structural & Civil
- Turner & Townsend, Costings

Case Study
Birmingham New Street Station Living Wall

Introduction
Installed in 2018, the 77 metre long living wall on the link bridge at New Street Station in Birmingham welcomes travellers from all over the country to the centre of the city. The living wall conceals a long dark and dirty retaining wall and creates a new, pleasant promenade of calming, green infrastructure amongst this built urban environment with the addition of 16,600 plants.

What were the key design challenges?
Concerns about air quality in the station and surrounding area were long standing, due to the high number of train services running on diesel, despite the station being converted to electric in the 1960's. Pollution, in particular levels of nitrous oxide, were very high across the whole station. In addition, in 2014 Birmingham was named by the World Health Organisation as one of nine UK cities where safety guidelines for air pollution was being breached. In response to these pollution issues a living wall was proposed to help absorb pollutants. The sixteen thousand plants in the living wall help to mitigate air pollution, whilst also creating a better environment for people arriving at, and leaving, the station on foot.

The living wall overlooking the New Street Railway Station tracks was originally installed by another living wall supplier in 2012 but despite several full replants, a good proportion of the plants had died by 2017.

Image A3.1
The 77 metre long living wall concealing a retaining wall and adding softness and helping mitigate air pollution around the station.

Case Study
Birmingham New Street Station Living Wall

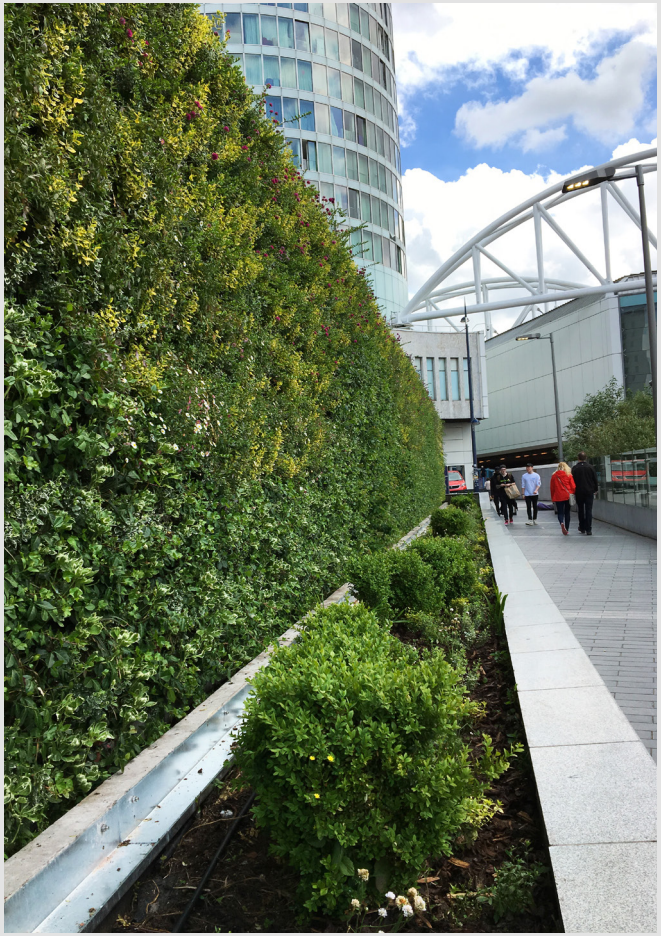

Image A3.2
Evergreen winter interest and texture in the hydroponic living wall.

The process to overcome the challenges
Network rail commissioned Biotecture to remove the old, soil based, living wall system and reconstruct a new hydroponic living wall to replace it. Biotecture developed a design with lines of flowing waves in a random informal pattern along the length of the wall.

A selection of 10 plant species are utilised in the planting plan to give variety in colour and texture. Flowering Heucheras and Armeria assures that there will be a vibrant splash of colour in the wall in the spring and summer months, whilst the variegated, evergreen foliage of the Euonymus and Pachysandra offer winter interest. As part of the contract Biotecture also replanted the horizontal planter that runs at the base of the living wall and three stand alone planters at the station end of the walkway.

Maintenance
Biotecture have a contract in place for the on-going maintenance of the living wall. A bespoke maintenance regime has been drawn up for the site outlining particular plant care requirements, irrigation system running parameters and site specific information. The irrigation system is remotely monitored daily from Biotecture offices by their maintenance team and regular site visits are carried out to monitor the appearance and overall health of the living wall.

The hydroponic system, along with on-going maintenance ensures the longevity of the living wall.

What makes the Public Realm a success?

Environment: It provides a piece of green infrastructure in the city centre, increasing biodiversity, reducing air pollution. It is the only green area in this part of the city.

Passengers and Placemaking: The living wall provides a pleasant green approach to the station, improving an otherwise unsightly retaining wall. The horizontal planter also provides seating.

What could be improved?
A better understanding of types of living/green walls and their maintenance could have avoided replacement and failures. An on-going maintenance plan is Important for living walls, usually with the supplier.

Awards
- Award for Excellence in Sustainability: (Greater Birmingham Chamber of Commerce)
- Runner up Environment & Energy Awards 2015

Who were the design team?
- Network Rail
- Biotecture, living wall specialist

Case Study
Bottesford Station

Introduction
The Poacher Line Community Rail Partnership identified a neglected piece of land next to Bottesford Station, Leicestershire, that they felt had the potential to be transformed for community use and become the 'Bottesford Friendly Garden.'

What were the key design challenges?
- A number of challenges were identified including:
- Size of the area
- Location of building
- Steep gradient and state of land

The process to overcome the challenges
The land was cleared to be able to work on an efficient design. The team looked at path options that could ease the gradient and planned the garden around the path route. The building was designed to create an open space with working electrics and toilet to minimise the requirement to remove any walls or major works.

What makes the Public Realm a success?

Environment: After the official opening, a group of adopters have developed the garden further with an additional pergola, wildflower garden, fern logs and added items such as hedgehog houses, bird feeders and bug hotels.

Image A4.1 'Before' image showing challenging gradient of land

Image A4.2 'After' image showing the planting beds and The Poacher Line community stands.

Image A4.3 The winding path helped organise the garden and helped ease the gradient.

Case Study
Bottesford Station

Image A4.4 View down the sloped garden showing the path organising the gardens to either side. Use of timber border to planters and contrast of bark chip and gravel give a considered yet informal feel to the community garden.

Community: The line officer initially surveyed the community via the Parish Council and found out the community were looking for a Community Garden area. She engaged locally via 'The Village Voice' magazine and local social media to gather interest as community working parties and long term maintenance groups were needed via the East Midlands Trains Station Adoption Scheme. Having dedicated ownership and Stewardship is a big success.

What could be improved?
A longer more sinuous path would improve accessibility. The partnership also has plans to team up with 'The Friendly Bench' a community project in Bottesford that tackles loneliness and social isolation.

Awards
- The Friendly Garden: Most Enhanced Station Buildings and Surroundings (ACoRP awards, National Community Rail Awards, 2019)

Who were the design team?
- Poacher Line Community Rail Partnership
- The line officer
- The Bee Friendly Trust,
- The local primary school and Beaver group
- Network Rail engineering team and Property and Sustainability team, East Midlands Trains
- BKPS builders

Case Study
Hackney Wick Station

Introduction
Hackney Wick Railway Station located in East London was rebuilt and upgraded in 2018.

What were the key design challenges?
The station design aimed to stitch into the surrounding public realm strategy in a rapidly evolving area. The challenge was that the overarching masterplan was constantly changing, and it was difficult to understand the future environment in which the station would sit. The station design aspired to extend out and connect to the public realm however it was uncertain what this would be.

The station site straddles two local authorities; London Borough of Hackney and London Borough of Tower Hamlets. The combination of Authorities presented a Planning challenge in terms of balancing the aspirations of each party. The station is owned by Network Rail, operated by London Overground and the operator franchise changed hands midway through the project. All parties had varying design standards and codes, making design compliance a complex process.

From the outset the challenge was to connect the two sides of the railway line, to provide permeability for rail passengers and also a pedestrian and cycle street for the wider community. Ensuring that the station felt safe was paramount and at the same time celebrating the local 'gritty' character.

Image A5.1 Hackney Wick Railway Station entrance.

Case Study

Hackney Wick Station

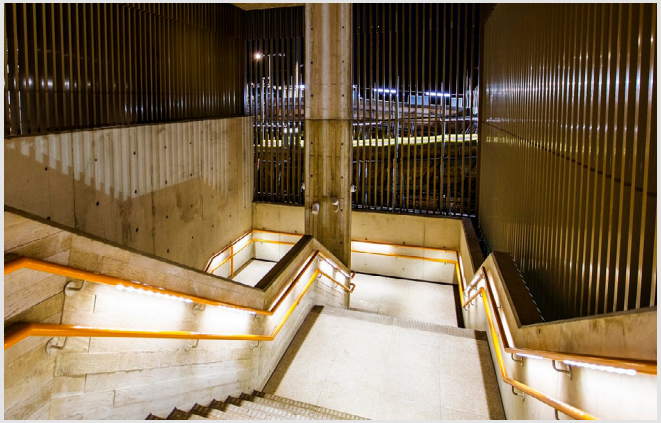

Image A5.2 Lighting, colour and material scheme for the station. Note lighting on the underside of handrails can cause glare when climbing up which can be a problem for partially sighted people.

Image A5.3 Pattern creation on the underpass. As illustrated here, spaces that project patterns onto floor surfaces should have adequate space to allow people to walk around rather than over the pattern.

The process to overcome the challenges

Early technical engineering studies showed that a tunnel beneath the railway was possible. The engineering team was retained throughout with the addition of the architectural and artist team to develop the design narrative. Close collaboration between the design team and an engaged client who bought into the design proposals was key to the success.

The station was designed to be permanent but many aspects of the public realm, where connections and external influences were uncertain, were designed to be temporary. Using recycled materials from the construction of the station to form elements for the public realm meant that regulations were relaxed slightly for the meanwhile uses. Planters were constructed from samples panels used for the station building and timber formwork used for furniture.

What makes the Public Realm a success?

As the station was to perform an urban connection, funding was available. London Legacy Development Corporation (LLDC) as the client, were therefore able to dedicate time and energy to ensuring that the design intent was followed throughout the discharge of the planning conditions. The integrity of the design was therefore maintained.

The close collaboration of the design team engineer, architect and artist, together with a supportive and engaged client was central to the integrity and success of the design. A supportive client and a Network Rail sponsor championing the design were crucial. The risks of delivering the station public realm with materials and design proposals that had never been done before required faith and backing from the sponsor.

The local community, primarily local creatives, really understand the place and its relationship to this part of London. The detailed story and the design language was very deliberate; the shuttering, the willows grown out of the soil, the reference to chemical induces provide several points of reference that speak to different audiences. Several layers of meaning are embedded in the design and some like it, some understand it – chemists, musicians, artists, creatives can find a reference that they relate to. The public realm responds to its place, it wouldn't make sense anywhere else.

Case Study

Hackney Wick Station

Interchange: The station is highly accessible with an underpass pedestrian and cycle route connecting the two boroughs (Hackney and Tower Hamlets) without having to enter the station itself. The 12m wide underpass provides 5m of width to the station for platform access whilst the other 7m is a fully public route, that will link the north to the south.

The bus routes and wider connections were in flux at the time of the design and so flexibility has been built in with the possibility of an additional entrance to the north side as well as temporary public realm to the south allowing opportunities to respond to evolving surroundings. Wayfinding has been improved to provide a single clear point of entrance, replacing the previous separate entrance ramps serving each platform.

Passengers: The rebuilt station has lift access to platforms with improved connections to its surroundings. The new entrance is conveniently sited for ease of access to the popular Queen Elizabeth Olympic Park.

Placemaking: The station's sense of place incorporates bespoke public realm elements drawing inspiration from the station's contextual setting of the River Lea.

The materiality is raw and gritty. The design ethos was about extending the character of Lea valley; sheet piling references the banks of the River Lea and the surfaces are being silty and knarley with exposed aggregate concrete surfaces reflecting the tow path. The Underpass turns the water on its side and creates a flickering watery light quality with the use of glass. The concrete frieze references the chemical industries, once central to the area and remembers the industrial past to prevent it from being swept away. The client embraced the need for the station to be tough, chunky, raw and not too precious.

The station and public realm has weight and permanence, despite much of it being designed to be temporary. It is not high tech but provides a solid and heavyweight environment that can endure.

Image A5.4 Station entrance showing clear wayfinding and public seating under tree canopy.

Image A5.5 Underpass with artistic reference to River Lea on the walls contributing to the sense of place.

Case Study

Hackney Wick Station

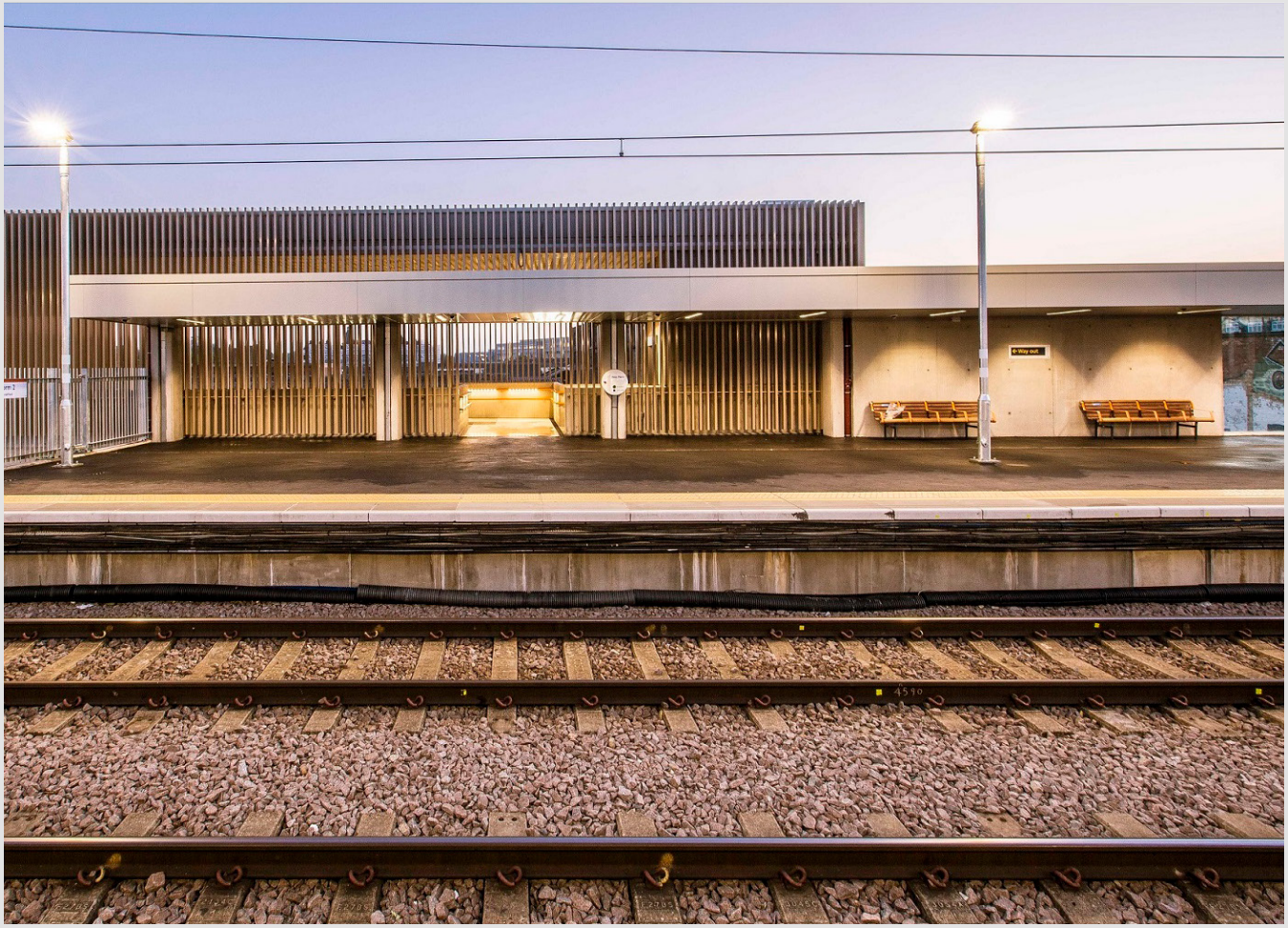

Image A5.6 Hackney Wick Railway Station Platform showing well lit, clear platforms with covered seating and tactile paving to platform edge.

What could be improved?

The maintenance of the public realm is segregated in two halves. The half maintained by Network Rail includes CCTV reducing graffiti to a minor issue on this side. The other side does not have CCTV and graffiti has been a frequent occurrence. Provision of CCTV covering the entire public realm may reduce this.

The concrete surfaces and timber furniture have had to be frequently cleaned. Some of the elements have now been painted as a quicker and more efficient means of removing the graffiti. Alternative materials may have been selected if the issue had been identified during the design process. Three large willow trees were planted in the forecourt. One of the trees has failed, due to lack of watering, highlighting the need for a robust soft landscape maintenance regime to form an integral part of the ongoing care of the station.

Awards

- RIBA London Award 2019
- RIBA National Award 2019
- Winner: 51st Concrete Society Awards, 2019
- Community Benefit award (ICE London Civil Engineering Awards, 2019

Who were the design team?

- Mott MacDonald, engineering
- Landolt & Brown, architect
- Wendie Hardie, artist
- London Legacy Development Corporation, client

Case study

Liverpool Lime Street Station

Introduction
Liverpool Lime Street Station was voted Station of the Year 2010 at the National Rail Awards. In Britain's 100 Best Railway Stations, Lime Street Station was one of only ten stations to be awarded 5/5 stars.

What were the key design challenges?
The ambition for Liverpool Lime Street Station was to create a world class setting for the refurbished 19th century station frontage. It was important that the project delivered a high quality public space which would provide a connection from the station to St George's Hall and the Cultural Quarter.

A key design challenge for the frontage was in addressing the dramatic change in level from concourse to street level. To create a public space which was able to meet accessibility requirements and display a positive and welcoming civic identity.

The process to overcome the challenges
The first step in realising the potential of the public space was to clear away post-war development which blighted the existing frontage to Liverpool Lime Street Station. In doing so, the original façade was fully revealed and refurbished.

Image A6.1 Station forecourt with clear signage to the front entrance. The image shows the stepped and accessible ramp approach to the station entrance with integrated lighting, seating, litter bins and planters.

Case study

Liverpool Lime Street Station

Image A6.2 Liverpool Lime Street station platform with generous platform width, seating and clear signage and lighting.

The design of the new public space carefully mediated the changes in level, through the creation of generous steps with an integrated slope. This provides accessible movement that is placed at the heart of the design and not a side-lined 'necessity'.

Seating and planting encourage dwelling and occupation of the space and finer details such as feature lighting and etched paving (by local artist Simon Faithful) add intrigue and a site-specific identity to the station.

Case study

Liverpool Lime Street Station

What makes the Public Realm a success?

Interchange: The station is the main transport hub in the city centre of Liverpool. It provides clear connections to the city's public transport through links to inter-city services and underground lines.

Placemaking: Due to the improved frontage and new area of public space, the station has become the host to social and political features. The main concourse features a pair of statues of comedian Ken Dodd and politician Bessie Braddock, a memorial to the Liverpool Pals.

Commercial: A redeveloped concourse incorporates new retail with supermarket and office spaces providing the opportunity to utilise the stationed owned premises for commercial activities which increase the use of the public realm. This also activates the space throughout the day and creates a destination rather than just a place to move through.

Passengers: Platforms have been lengthened and widened with straighter profiles to increase capacity and ease of access.

Image A6.3 Station arrival before the station re-development.

Image A6.4 Pavement etchings by local artist Simon Faithful

Image A6.5 Liverpudlian celebratory sculptures in the main concourse

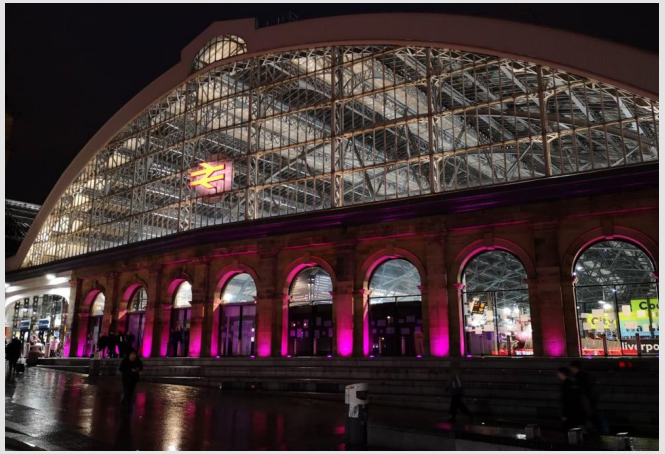

Image A6.5 Facade lighting turning purple to celebrate International Day of Disabled Persons #Purple Light Up

Case study

Liverpool Lime Street Station

Image A6.6 Liverpool Lime Street frontage showing change in level from road and drop off to station entrance. planters and tree planting have been integrated into the stepped and ramped approach to provide environmental interest.

What could be improved?

The design of the steps and slope has created some areas where steps are dissected by the slope, resulting in feathered/tapered steps. These are considered to be problematic in accessibility terms.

Awards

- Station of the Year award (National Rail Awards, 2010)
- Major Station of the Year award (National Rail Awards, 2019)
- HS1 Station Environment Award (National Railway Heritage Awards, 2011)

Who were the design team?

- Delivered by a partnership between the Homes and Communities Agency (HCA), Liverpool Vision, Liverpool City Council, Network Rail and Mersey
- Glenn Howells Architects
- Simon Faithful (etching designs for glazing)

Case study
Meridian Water Station

Introduction
Meridian Water railway station is part of an 80 hectare regeneration project, and opened in June 2019. It is on the Lea Valley Line in Edmonton, in the London Borough of Enfield, north London.

What were the key design challenges?
Extensive site contamination meant on-going remediation works at the same time as construction. Due to the phasing of the surrounding development, the site area will be sparse for a time, so there was a need for temporary, robust solutions that make people feel safe, whilst also responding to strategies for permanent works.

The process to overcome the challenges
The brief was revisited to make wider, safer routes and use robust industrial materials that last longer and have lower maintenance requirements. The original brief was for a series of narrow routes to the station through a future development site and a small 'high quality' permanent square. This was challenged, proposing wider ecologically rich movement routes for people of all abilities instead. Temporary pedestrian and cycle access routes were created. A temporary western square Introduced with a more permanent public realm integrating the east station access with future 'Meanwhile Use' spaces and a new crossing across a major road. Close collaboration enabled simultaneous contractual work packages.

Image A7.1 Illuminated tower and safe 24 hour accessible footbridge.

Meridian Water Station

Image A7.2 Dynamic surface artwork

Image A7.3 Ecology green corridor

Image A7.4 Concrete planters

What makes the Public Realm a success?

The project begins the process of recovering the site for ecology and people, looking forward to future development and residential communities while marking industrial heritage. Operationally, the project enables access to the new railway station while defining a high quality, safe and distinctive experience for residents and visitors. The scheme combines off-the-shelf products with locally manufactured elements to make low-cost, high-impact spaces.

The project is the first piece of infrastructure and the first piece of public realm delivered as part of the Meridian Water project. One of the central aims of Meridian Water is to make local people the principal beneficiaries of the housing-led regeneration of the area. The new public realm connections/station bridge allow access to the park, improving access to green space and encouraging active lifestyles.

The entire project was delivered in a ten and a half month programme, with the build programme lasting only thirteen weeks. Innovation for the project therefore focussed on combining off-the-shelf but unusual products with locally manufactured elements.

Case study
Meridian Water Station

Passengers: Improved accessibility for passengers with stairs, and lifts providing step-free access across the railway and to the enclosed concourse that features a distinct bespoke golden panel design.

The station has been upgraded with a new 24 hour accessible footbridge incorporating lifts and an escalator across the railway for passengers and the community along with a new ticket hall and concourse.

Placemaking: The spatial experience of the forecourt with seating spaces, planting, cycle racks and dynamic surface lines enhances the user experience of the public realm. The station's gold roof and two towers act as beacons illuminating at night to make it an inviting gateway to Meridian Water.

Commercial: The high quality design illustrates how investment in transport can lead to regeneration and growth of the area increasing housing and businesses in its periphery. The station provides opportunities for local people and businesses to locate their enterprises on excellent sites within Meridian Water.

Environment: A strong ecological strategy underpins the design. Engagement with local communities including the local Meridian Angel School resulted in the delivery of the ecology objects in the scheme which offer the school a teaching opportunity within the project.

Community: Using off-the-shelf products for the project allowed the team to spend some of the budget on occasional unique elements that were designed and made in collaboration with local maker space BldgBloqs. This seeded a local circular economy which the later phases of the project are expanding. Converted shipping container cycle stores and growing containers for the project were fabricated by a maker space within the masterplan area.

Image A7.5 Robust furniture design

Image A7.6 Meanwhile solutions

Case study

Meridian Water Station

Image A7.7 Forecourt/ square

What could be improved?

Provision of sustainable urban drainage and its maintenance have not been 100% successful. A better maintenance regime or planting scheme might have mitigated this. The speed of project delivery led to the omission of certain details that would have allowed for better flexibility, like the moving of concrete planters.

Awards

- Station of the Year award (National Rail Awards, 2010)
- Major Station of the Year award (National Rail Awards, 2019)
- HS1 Station Environment Award (National Railway Heritage Awards, 2011)

Who were the design team?

Public Realm:

- Periscope
- Lewis Hubbard

Architecture:

- Scott Brownrigg
- ARUP
- Volker Fitzpatrick

Case Study
Reading Station

Introduction
Reading Station is one of the busiest rail hubs in Britain, used by nearly 20 million passengers a year. In 2020 it was awarded the National Rail Awards, Major station of the Year.

What were the key design challenges?
The redevelopment of Reading Station, which was completed in 2014, was borne through a need to modernise and improve the current station in response to, and anticipation of, growing numbers of passengers accessing the railway.

The previous arrival experience was not befitting of a major railway interchange, lacking in facilities and civic identity.

The process to overcome the challenges
The existing interchange subway was refurbished and extended, providing a link between two public plaza spaces. A much improved arrival experience from the town centre is centred on the Grade II listed entrance with a high quality and flexible civic square reflecting its setting.

To provide a necessary transfer deck, a spacious 30 metre wide modular structure, with sinuous blue canopy, was constructed, which threads ribbon-like through the station and spans across all platforms accessed via stairs and escalators.

Image A8.1 Reading station forecourt imagery, illustrating the design enables space for activity, retail and food outlets adjacent to the station entrance. Links are also provided to buses and the cycle park.

Case Study
Reading Station

Image A8.2 Platform with clear markings and seating arrangements

The much-improved Reading Station has benefitted from better quality waiting areas, varied retail and facilities and improved accessibility with step-free access and a coordinated approach to wayfinding.

What makes the Public Realm a success?

Interchange: The new viaduct to the west of the station delivers two brand new bridges over Cow Lane which will allow improved connections to and from west Reading and, for the first time ever, new bus services along Richfield Avenue.

Connections to the city centre are improved with greater pedestrian links, and clear routes to bus stops and cycle racks.

Placemaking: The redesigned forecourt includes a plaza space (which can hold pop up markets), an amphitheatre, planting, seating and lighting, providing a social and cultural anchor. The station concourse also incorporates the rainbow Pride Steps in support of inclusivity and diversity.

Case Study
Reading Station

Commercial: Eating outlets and retail enhance the user experience and provide revenue generation. Passive surveillance from the units enhance the sense of safety.

Passengers: In a recent transformation, a new wider footbridge was provided with escalators and lifts providing step-free access to all platforms. All booking office counters have induction loops and the ticket offices have lower counters as part of inclusive design. All platforms of the station have been lengthened to create room for longer trains and upgraded with new platform canopies, better waiting room facilities as well as customer toilets and retail outlets.

Environment and Community: Grow Wild UK worked in partnership with Network Rail to transform an area of land by the station's multi-storey car park into a windflower garden and wildlife haven. Volunteers from Network Rail, Kew Gardens and the University of Reading enhanced the environment for bees and pollinating insects, engaged the local community and made it more attractive for passengers.

Image A8.3 Forecourt with amphitheatre

Case Study
Reading Station

Image A8.4 Reading Station Grow Wild UK Project

The Pride Steps and support to NHS through representation within the rail owned facilities fostered community connections and engagement.

What could be improved?
Utilising public realm features for the representation of community themes is a wonderful way of using stations for positive engagement and messaging as demonstrated in the implementation of the 'Pride Steps'. These ambitions should have consideration for the needs of all members of the community. Consultation with accessibility advisors would have been astute, to confirm it is not discriminatory to disabled people using the station.

Awards
- Station of the Year: major winner (National Rail Award, 2020)
- Project of The Year (National Rail Awards, 2015)

Who were the design team?
- Grimshaw, architects
- Network Rail
- TATA

Case Study
Sheffield Station

Introduction
Sheffield Station and the forecourt of Sheaf Square were developed to be the gateway to Sheffield and South Yorkshire, presenting a high quality, safe yet exciting public realm.

What were the key design challenges?
Prior to the public realm regeneration, the space in front of the station had been diminished by the dominance of Sheaf Street and the car park, which had disconnected the station from the City Centre and other key destinations. This resulted in a heavily congested, polluted and noisy environment with a poor perception of arrival.

In responding directly to the road network, the gradual development of the surrounding urban context of the station had resulted in a mixed incoherent appearance, of poor quality and disjointed urban form. This had left a public realm that had a poorly defined edge and offered a torturous pedestrian route to the City Centre.

Image A9.1 The steel sculptural water feature, known as Cutting Edge Sculpture, shown on the left, helps lead the passenger through Sheaf Square to the station entrance. The water feature also acts as a sound buffer to the road.

Sheffield Station

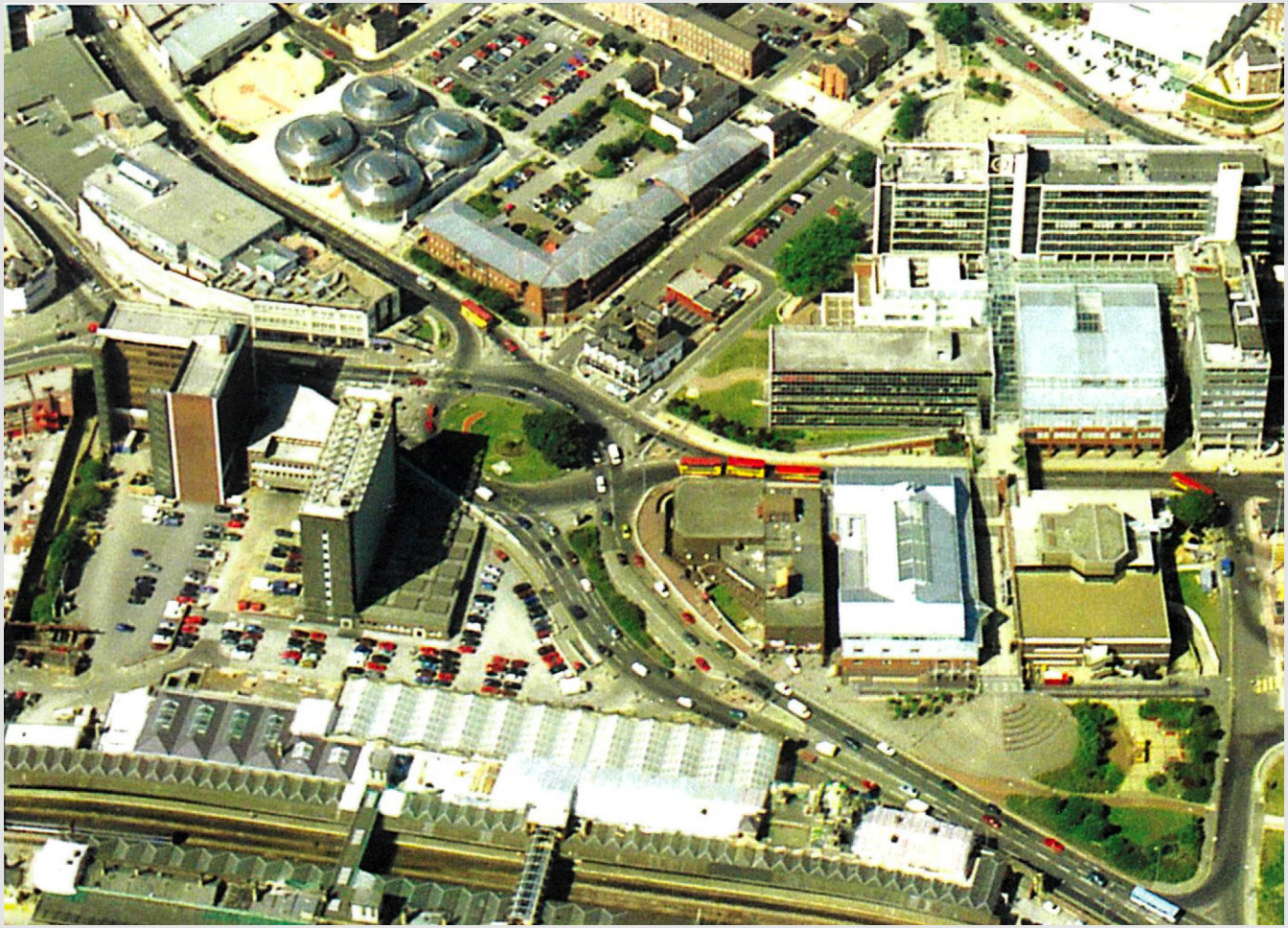

Image A9.2 Aerial to show station and road network before development.

The process to overcome the challenges

An in depth optioneering study was undertaken by the design team to examine the viability of two options for Sheaf Square which were underpinned by the configuration of Sheaf Street. The first saw Sheaf Street adapted into an underpass and the other reconfiguring the street at grade, adjusting road arrangements to provide more direct pedestrian crossings and a new pedestrian square. The 'at grade' option was developed but the optioneering study was crucial to aid decision making.

The ambitions to reconnect the station and its associated public space, with the rest of Sheffield, were facilitated by prioritising pedestrian movement. Clear, and simple to use, routes were designed with gateways and thresholds clearly identified at the main points of arrival. A route was established from the station to the heart of the city, linking key anchors such as the taxi rank and drop off area, the retail quarter and the University to the retail quarter and to the University.

The entire design of Sheaf Square was collaboratively developed by the Council and the design team along with a wide group of stakeholders. Consultation included a major public exhibition that had 30,000 attendees, which was paramount in shaping the project.

Case Study
Sheffield Station

What makes the Public Realm a success?

Passengers and Interchange: The design successfully created a thriving urban hub.

The large paved forecourt area allows for large numbers of people to spill out of the station on arrival to Sheffield, it acts as an exciting meeting and arrival point animated by water jets, cascades and the Cutting Edge water feature. This large forecourt confirms clear, accessible and legible relationships to all destinations within and beyond the station and provides clear and safe integration between all modes of transport, reinforcing the regeneration of its context.

The grading and surface levels were designed to facilitate full accessibility, for instance to achieve the three and a half metre level change in relative comfort along the station incline, a maximum gradient of 1 in 20 was set for this route. This also removed the need for handrails that could potentially form a barrier to the surrounding square.

Placemaking: The forecourt enhances the sense of place with a cohesive material palette, the generous installation of benches, integrated art, sculpture, water features, lighting, bollards, planting, and cultural elements making it a hub for recreation and leisure.

A consortium of local metal worker artists Si and Keiko Mukaide joined the design team in an open collaboration and exchange of design ideas. The Cutting Edge water feature was developed as a result and provides a strong pedestrian link from the station to Sheaf Square. It was designed to be highly visible from all points within the space and buffers noise from surrounding roads. This steel feature pays homage to the very substance that helped shape Sheffield into the 'Steel City' and celebrates the city as a leader in precision engineering and contemporary design excellence.

Commercial: The station is integral to the fabric of the city centre with opportunities for business and retail. It plays host to a number of businesses, cafés and vending machines.

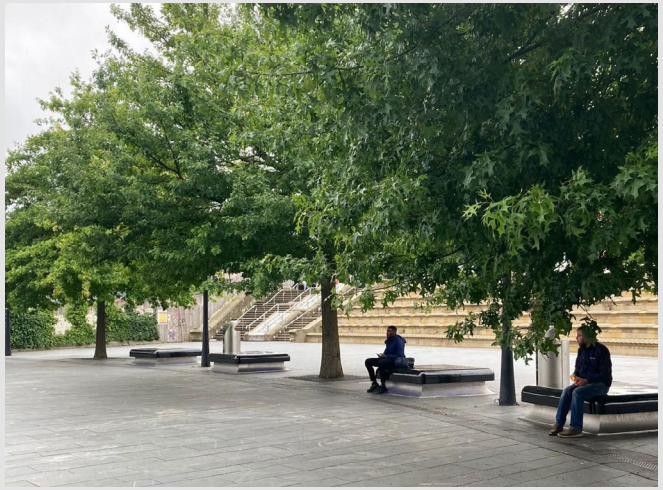

Image A9.3 Public seating and tree planting

Image A9.4 Station forecourt and public art

Sheffield Station

Image A9.5 Cutting Edge Sculpture, designed to be visible from all points within the station forecourt pays homage to Sheffield's history as the 'Steel City' and contributes to the station's sense of place

What could be improved?

The disadvantage of choosing to keep the road at grade during the optioneering process meant that the position of the re-aligned road severed some routes. It was felt, however, that there was great scope to develop innovative solutions to help place pedestrians above traffic, including the incorporation of 'super crossings'. With regards to the new Healthy Streets agenda which promotes active travel and integrate it into design solutions, the downgrading of the Sheaf Street would be optimum to create less of a barrier to the station.

Awards

- Project of the Year Award (National Rail Awards, 2006)
- Voted best for cyclists (ATOC National Cycle Rail Awards, 2014)
- The Great Place Award 2010 (The Academy of Urbanism)

Who were the design team?

- EDAW - Lead design and project manager
- UDEP - Design partner
- Faber Munsell - Transportation planners and highways engineers
- Turner and Townsend - cost consultants
- Art2Architecture - Lighting design
- Si - Consortium of metal worker artists (phase II)
- Keiko Mukaide - glass artist (phase II)

Case study

Swansea Station

Introduction
Swansea station is located mid-way along the High Street, approximately half a kilometre north of central Swansea. Its location on an important north-south route in central Swansea and as a transport hub establishes it as a key component to the gateway experience for the city.

What were the key design challenges?
Prior to 2010, the station, which is over 150 years old, had not had any major material investment since the 1970s. The station was therefore characterised by a poor physical appearance, internally and externally, poor facilities, inadequate accessibility for all users and poor integration with the wider transport network.

The public realm around the station was equally unappealing. Unloved, under-invested and poorly utilised, the public realm around the station had become a depressed part of the city creating an underwhelming first impression of the city among visitors. The poor public realm was attributed to the direct discouragement of developer interest and investment around the station.

Image A10.1 Swansea station entrance canopy with clear signage indicating station entrance, litter bins to station entrance strategically placed to reduce clutter and canopy , which offers the passenger shelter

Swansea Station

Image A10.2 Swansea station concourse after redevelopment with clear wayfinding in both Welsh and English

The process to overcome the challenges

A package of improvements was proposed at the station. The project included installing new canopies over the platforms and over the station's main entrance, along with the removal of double doors to improve flow. Further station improvements include digital information boards, new and improved seating, lighting and new toilets, including a disabled Changing Places facility. To improve accessibility to the station, a new side entrance was created, tactile wayfinding leading between the station and local "ftr" Metro stops introduced and additional space added for cyclists to store their bikes.

What makes the Public Realm a success?

Placemaking: Due to the station's location, it acts as an anchor to attract and generate movement along the High Street corridor. The new entrance canopy announces the presence of the station and provides shelter to the public realm underneath it. The use of copper was chosen through consultation with local stakeholders in response to the industrial heritage of the surrounding area - Swansea was historically known as 'Copperopolis'. New signage and re-branding celebrate Network Rail's identity within the historic context.

Swansea Station

Commercial: Increased retail facilities at the station offer opportunities for local businesses and reflects successful station improvement and effective focus on user and stakeholder engagement.

Passengers: The station refurbishment has enhanced accessibility for a greater number of people including; step-free access to all platforms, smoother platform surfaces, a widened concourse area, information in braille, via tactile and large print maps, the installation of a Customer Information Pod with a low height counter and bilingual signage.

Further station improvements to enhance the passenger experience in the public realm include digital information boards (including bus information for the local area), new heated waiting rooms, new and improved seating and lighting and new toilets. Safety and security has been improved by incorporating transparent glass boundaries within new and existing open spaces to provide natural visibility and surveillance with an increase in the number of CCTV cameras. New lighting and a waiting shelter have been provided on platform 4.

Image A10.3 Use of flexible space within the station concourse for a community exhibition.

Case study
Swansea Station

Image A10.4 station forecourt and signage

Awards

- Best Large Station (International Station Awards, 2012)
- Best Overall Station (International Station Awards, 2012)

Who were the design team?

- BDP were Architect, Building Services Engineer, Structural Engineer and Consultation Consultant (EqIA)
- Transport for Wales
- Arriva Trains Wales
- Swansea Council
- Network Rail
- Alun Griffiths Ltd

Case study

Wemyss Bay Station

Introduction
Wemyss Bay Station serves the village of Wemyss Bay, Inverclyde, Scotland. It incorporates the Caledonian MacBrayne ferry terminal connecting mainland Scotland to Rothesay on the Isle of Bute. Network Rail carried out a £5m renovation of the station between 2014 and 2016.

What were the key design challenges?
A key design challenge was to preserve the sense of place and the station heritage.

The process to overcome the challenges
The station had previously been painted green and purple, and there was no continuous colour scheme from the ferry terminal to the railway station. It is generally accepted that the colour of the station should be that of the current train operating company but working with Transport Scotland, it was agreed that the station's historic colour scheme was more appropriate in this case to preserve the sense of place.

What makes the Public Realm a success?

Interchange: The station offers multi-modal transport with links to the ferry terminal. The walkway down to the terminal was designed to be a generous width and curved shape, allowing for the easy flow of large crowds around the station.

Image A11.1 Wemyss Bay concourse showing generous public realm and clear sightlines and routes through to the platforms. Seating follows the curve of the roof above and aid in directing the passengers through to the platforms.

Case study
Wemyss Bay Station

Image A11. 2 The curved walkway of generous width down to the ferry terminal to allow large crowds to flow with ease.

Placemaking: The station is a Category A listed building and has returned to its original Caledonian Railway colour scheme of 1903 to celebrate the station's heritage.

Commercial: The station hosts a bookshop 'Friends of Wemyss Bay' with a range of donated second hand books and limited range of new collections. There are also various shops and businesses located around the station.

What could be improved?
Working within a heritage context and listed structure can provide design challenges. The need to retain historic details have led to some technical issues, like leaks.

Awards
- Best entry (National Railway Heritage Awards, 2017)

Who were the design team?
- James Miller - Architect
- Donald Matheson - Chief Engineer of the Railway Company

Public Realm Design Guidance for Stations

Station Categories Classification

B

Appendix B
Station Categories Classification

The tables on the following pages set out the passenger amenities and facilities that should be provided at each station.

This is set out by station category, with the largest most used stations (Category A) requiring many more amenities that the least used (Category F).

Note: *A step free route to be provided where average daily number of passengers embarking & disembarking exceeds 1000 people p/a.*

This is unlikely to meet the requirements of the Equality Act 2010 and should be the subject of a site specific locality & demographic study.

The relationship between the categories in the following tables and the public realm areas identified in this guidance can be summarised as follows:

- The public realm Forecourt area includes the Forecourt Area table and may also include the Station Access/Station Egress table
- The public realm Concourse area includes the Station Entry and Ticketing table and may also include the Waiting and Commercial table
- The public realm Platform area includes the Platform Zone table

	No.	Type	Criteria per annum
A	28	National Hub	Over 2m trips: over £20m
B	67	Regional Interchange	Over 2m trips: over £20m
C	248	Important Feeder	0.5–2m trips: £2–20m
D	298	Medium Staffed	0.25–0.5m trips: £1–2m
E	695	Small Staffed	Under 0.25m trips: Under £1m
F	1,200	Small Unstaffed	Under 0.25m trips: Under £1m
Total	2,536		

Key

Mandatory PRM NTSN Requirement	**Highly Desirable**	**Desirable**	**Optional**

Appendix B
Station Categories Classification

Station Access/Station Egress	Station Category A	B	C	D	E	F
Interchange mode: Car/Bus/Taxi/ Tram/Cycle/Tube	■	■	■	■	■	
Vehicle Pick Up/Set Down Areas	■	■	■	■	■	■
Blue Badge Parking Area	■	■	■	■	■	■
Level, Step-free Access	■	■	■	■	■	■
Wi-Fi	■	■	■	■		
Advertising	■	■	■	■	■	

Forecourt	Station Category A	B	C	D	E	F
Landscaping (Trees, Planters, Shrubs)	■	■	■	■		
Weather Protected Walking Routes Between Modes	■	■	■	■		
Sheltered Waiting Areas for Buses and Taxis	■	■	■	■		
Locality Information	■	■	■	■	■	■
Train Service Information	■	■	■	■	■	■
Station Identification Signage and National Rail Symbol	■	■	■	■	■	■
Secure, Identifiable Boundaries	■	■	■	■		
Appropriate Security Devices, e.g. CCTV	■	■	■	■	■	■

Forecourt	Station Category A	B	C	D	E	F
Secure Cycle and Vehicle Parking in Closest Proximity to Station	■	■	■	■		
Post Box	■	■	■	■		
Public Art	■	■	■			
Cycle Hire	■	■	■			
Rail Replacement Bus Location	■	■	■	■	■	■
National Rail Symbol	■	■	■	■	■	■
Demarcated Accessible Route	■	■	■	■	■	
Passenger Help Point	■	■	■	■	■	■
Long Stay Car Park	■	■	■	■		
Short Stay Carpark	■	■	■			
Hostile Vehicle Devices	■	■	■			
Station Service Yard	■	■				
Maintenance Depot	■	■				
Contractors/Trade Counter	■	■				
Train Crew Parking	■	■	■			
Other TOC Parking	■	■	■	■		
Parking Payment Machines	■	■	■	■		
Wi-Fi	■	■	■	■	■	
Advertising	■	■	■	■	■	■

Station Entry and Ticketing	Station Category A	B	C	D	E	F
Concourse Building	■	■	■	■		
Station Reception	■	■	■	■	■	
Induction Loops	■	■	■	■	■	
Ticket Machines	■	■	■	■	■	■
Travel Centre — Advanced Travel, Business Travel and Information	■	■				
Timetables, Leaflets	■	■	■	■	■	■
Left Luggage	■	■				
Station Toilets (Unpaid Side)	■	■				
Changing Places Facility	■					
Station Clock	■	■	■	■	■	■
Wayfinding Signs (Platform Signs/Exit Signs)	■	■	■	■	■	
Summary Departures Board	■	■	■	■	■	■
Customer Information Screen	■	■	■	■	■	
Interchange Information	■	■	■	■	■	
Trolley Management	■	■				
Customer Seating	■	■	■	■	■	■
Mobility Assistance Point	■	■	■			

Appendix B
Station Categories Classification

Station Entry and Ticketing	Station Category A	B	C	D	E	F
British Transport Police Office	■					
Wi-Fi	■	■	■	■		
Advertising	■	■	■	■		

Waiting and Commercial	Station Category A	B	C	D	E	F
Comfortable Waiting Areas and Facilities	■	■	■	■		
Waiting Lounges	■	■	■	■		
Range of Seating	■	■	■	■	■	■
Parent Room Baby Change	■	■	■	■	■	
Help Point	■	■	■	■		
Cash Machines	■	■	■	■		
Food Retail	■	■	■	■		
Other Retail	■	■	■			
Goods Collection point	■	■	■			
Lost Property	■	■				
Programmable Event Space	■	■				
Statutory Signage	■	■	■	■	■	■

Waiting and Commercial	Station Category A	B	C	D	E	F
Advertising	■	■	■			
Vending	■	■	■	■		
Station Wayfinding	■	■	■	■	■	■
Evacuation Point Refuges	■	■	■	■	■	■
Ticket Office	■	■	■	■		
Station Control Room	■	■	■			
Secure Room	■	■	■			
Business Lounge/ Office / Meeting Rooms	■	■				
Retail Storage	■	■				
Loading Bay	■	■				
Dog Spend Area	■	■				
Wi-Fi	■	■	■	■	■	■
Advertising	■	■	■	■	■	■

Platform Zone	Station Category A	B	C	D	E	F
Station Toilets (paid side)	■	■	■	■	■	
Automatic Ticket Gates	■	■	■	■	■	
Canopies and Shelters	■	■	■	■	■	■
Lifts	■	■	■	■	■	
Help points	■	■	■	■	■	
Seating	■	■	■	■	■	■
Tactile Paving	■	■	■	■	■	■
Platform End Barriers	■	■	■	■	■	■
Public Address System	■	■	■	■	■	■
CCTV	■	■	■	■	■	■
Lighting	■	■	■	■	■	■
Yellow Lines to Platform Edge	■	■				
Vending Machines	■	■	■			
Retail	■	■				
Landscaping	■	■	■	■	■	
Waste Management	■	■	■	■	■	■
Wi-Fi	■	■	■			
Advertising	■	■	■	■	■	■

C

Public Realm Design Guidance for Stations

Glossary, Reference documents, Image Credits and Sustainability Performance

Appendix C
Glossary

AFC	Anticipated Final Cost
ATG	Automated Ticket Gates
APM	Association for Project Management
BREEAM	Building Research Establishment Environmental Assessment Method
BALI	British Association Of Landscape Industries
BTP	British Transport Police
CABE	Commission for Architecture and the Built Environment
CCTV	Closed Circuit Television
CEEQUAL	Civil Engineering Environmental Quality Assessment and Award Scheme
CIS	Customer Information Screens
CPtED	Crime Prevention through Environmental Design
DfT	Department for Transport
DIA	Diversity Impact Assessment
DPTAC	Disabled Persons Transport Advisory Committee
ESA	Environment and Social Appraisal
ESMP	Environment and Social Management Plan
ETFE	Ethylene Tetrafluoroethylene
EV	Electric Vehicle
GRIP	Governance of Railway Investment Projects
HVAC	Heating Ventilation and Air Conditioning
HVM	Hostile Vehicle Mitigation
IED	Improvised Explosive Device
LCCA	Life Cycle Cost Analysis
LEED	Leadership in Energy and Environmental Design
LEMP	Landscape and Ecological Management Plan
LMP	Landscape Management Plans
NBS	National Building Specification
NR	Network Rail
NTSN	National Technical Specification Notice
OGC	Office of Government and Commerce
PIDs	Passenger Information Displays
PRM	Persons with Reduced Mobility
PTE	Passenger Transport Executives
RDG	Rail Delivery Group
RFID	Radio Frequency Identification
RNIB	Royal National Institute of Blind People
RUS	Route Utilisation Strategy
SAF	Security Assurance Framework
SIDOS	Security in the Design of Stations
SuDS	Sustainable urban drainage system
TfL	Transport for London
TOC	Train Operating Company
TPO	Tree Preservation Order
TS	Transport Scotland
TUMS	Technical User Manuals
TVM	Ticket Vending Machine

Appendix C
Reference Documents

A wide range of Network Rail and industry-wide documents and guidance notes were used in compiling this Guide.

Below is a list of the most relevant standards and guidance documents referenced within this Guide. These documents are drawn from a range of sources and have been used in the development of this Guide. The list is not intended to be exhaustive but provide the user of this Guide with a sound basis upon which to develop any station public realm scheme.

Relevant Network Rail Standards and Guidance documents:

- Network Rail Environmental Strategy 2020 – 2050
- Network Rail Our principles of good design (January 2020)
- Re-Imaging Railway Stations report (February 2021)
- Network Rail Operational Property Handbook, Bollard Details (Drawing NR/PTH/0026 P1)
- Network Rail Operational Property Handbook, Soft Landscaping & Ground Surface Details (Drawing NR/SD/PTH/0097 P1)
- Station Wayfinding Design and Assurance NR/L2/CIV/150
- Environment and Social Minimum Requirements NR/L2/ENV/015
- Project Acceleration in a Controlled Environment (PACE) NR/L2/P3M/201

Network Rail Design Guidance documents

Published documents

- Design Advice Panel Project Guidance NR/GN/CIV/100/01
- Station Design Manual NR/GN/CIV/100/02 (draft)
- Heritage: Care and Development NR/GN/CIV/100/05
- Public Toilets in Managed stations NR/GN/CIV/200/04
- Footbridges & Subways NR/GN/CIV/200/07
- Inclusive Design Manual NR/GN/CIV/300/04
- Wayfinding Design Guidance Manual NR/GN/CIV/300/01
- Third Party Funded Car Parks (2020) NR/GN/CIV/400/07
- Station Capacity NR/GN/CIV/100/03
- Station Facilities and Amenities NR/GN/CIV/200/03
- Masterplanning NR/GN/CIV/100/07
- Parking and Mobility at Stations NR/GN/CIV/200/11
- Security Assurance Framework

Legislation

- Department for Transport, National Technical Specification Notice (NTSN), Persons with Reduced Mobility (PRM) Jan 2021 (this replaces the EU standard PRM TSI)
- Department for Transport, Design Standards for Accessible Railway Stations Code of Practice (2015)
- Department for Transport, Security in the Design of Stations (SIDOS) Guide
- Department for Transport, Cycle Infrastructure Design LTN 1/20
- DfT's Inclusive Mobility, 2005
- Equality Act (2010)
- CDM Regulations Construction and Design Management Regulations (2015)
- The Building Regulations, The Building Act (1984) Approved Document parts A to P
- Building Regulations Approved Document B (Fire Safety)
- Building Regulations Approved Document M (Access to and Use of Buildings)
- Building Regulations Approved Document K (Protection from falling)
- National Railways Security Programme (NRSP) Section 7 Station Security (Restricted)
- Scottish Building Standards

Appendix C
Reference Documents

British Standards
Planting and tree works
- BS 3936 Nursery stock specification
- BS 3882 Topsoil specification
- BS 5837 Trees in relation to construction
- BS 4428:1989 Code of practice for general landscape operations (excluding hard surfaces)
- BS 3998 Recommendations for tree works

Hardworks
- BS7533 Pavements constructed with clay, natural stone or concrete pavers
- BS EN 14157:2004 Natural stones. Determination of abrasion resistance
- BS 1722 Fence specification
- BS 6180 Barriers in and about buildings: Code of practice
- BS 7818 Specification for pedestrian restraint systems in metal

Others
- BS 8300- 1 and 2:2018 Design of buildings and their approaches to meet the needs of disabled people – Code of practice
- BS 5395-1:2010. Stairs. Code of practice for the design of stairs with straight flights and winders

Play
- BS EN 1176: Playground Equipment and Surfacing
- BS EN 1177: Impact Attenuating Playground Surfacing and determination of Critical Fall Height
- BS 7188: Impact Absorbing Playground Surfaces: Performance requirements and Test Methods

Lighting
- BS 5489-1 Code of Practice for the Design of Road Lighting Part 1: Lighting of Roads and Public Amenity Areas.
- BS 5266-1 Emergency Lighting Part 1: Code of Practice for the Emergency Lighting of Premises.

Sustainability
- BS ISO 21931-1:2010, Sustainability in building construction, framework for methods of assessment of the environmental performance of construction works, Buildings
- BS EN 15643-1:2010 Sustainability of construction works; Sustainability assessment of buildings, general framework could be referred.

Reference/Guidance documents
- TfL, Station Public Realm Design Guidance, 2015
- TfL, Streetscape Guidance, 4th Edition 2019 Rev 1
- DfT, Inclusive Mobility A Guide to Best Practice on Access to Pedestrian and Transport Infrastructure, Dec 2021
- The Crown Estate, Development Sustainability Principles
- Arup and Network rail, Tomorrows Living Station comp, 2nd Issue | Oct 2019
- Rail Landscapes – Marshalls
- Getting home safely - Safe by Design by Women Transport Planners, Atkins, April 2021
- The Rail Innovation Group - Parcels as Passengers
- CoMoUK, Mobility Hubs Guidance, 2019
- Cycle Parking and Security Standards June 2021
- A Guide to Inclusive Cycling, Wheels for Well-being
- Rail Delivery Group, Cycle-Rail Toolkit, April 2016
- Rail Delivery Group, Sustainable Stations: best practice
- SuDS Manual - C753 The SuDS Manual CIRIA
- TDAG tree guidance
  - First Steps in Urban Heat
  - Trees in the Townscape – A guide for decision makers
  - Tree Species selection
  - Trees in Hard landscape – A guide for delivery
  - First steps to urban air quality
- Fields in Trust Guidance for Outdoor Sports and Play
- Developing Station Travel Plans, RSSB T803 Toolkit 2009
- Guidance on the implementation of Station Travel Plans, RSSB 2013

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Appendix C
Sustainability Performance

Network Rail has launched its 2020-2050 Environmental Strategy which provides a roadmap for the organisation to target net zero carbon emissions by 2050 (2045 in Scotland). The Strategy focuses on four sustainability priorities that will maximise the positive contribution rail can make to the lives of passengers, our society and our economy while minimising any negative impacts on our natural environment.

A low emission (net zero carbon) railway
A reliable railway that is resilient to climate change
Improved biodiversity of plants and wildlife

Minimal waste and use of materials
In 2021 the Network Rail Climate Action design manual was launched to highlight approaches to mitigate climate impacts, improve resilience and factor in adaptation. Network Rail has an ambition that like for like is replaced with like for better in the future so all renewals and enhancement work improve resilience. This approach aligns with the NR buildings policy objective to measure 4's:

- Sustainability
- Satisfaction
- Safety
- Stewardship

Network Rail standard NR/L2/ENV/015 Environmental and Social Minimum Requirements for Projects, sets out the requirements for the management of environment and social risks and opportunities during brief preparation and design.

The standard promotes the use of independent environmental assessment tools such as BREEAM and CEEQUAL for benchmarking environmental performance. Material selection, design for maintenance, deconstruction and re-use are all major factors for projects. When these tools are used in a portfolio or individual project they can be used to evidence approaches to material efficiency and service life planning.

Standards Reference

Environmental and Social Minimum Requirements.
NR/L2/ENV/015

Climate Action Design Manual for Buildings and Architecture
NR/GN/CIV/100/04

Public Realm Design Guidance for Stations

Public Realm Considerations Tool

Appendix D
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Passengers

Inclusion and Accessibility

How can the Public Realm promote a positive, inclusive and accessible passenger experience?

		Balancing the Priorities				
		Not relevant	Yes: Low Potential	Yes: Medium Potential	Yes: High Potential	Yes: Important Priority
		0	1	2	3	4
1	**Inclusivity:** How can the public realm be inclusive for all? Has a Diversity Impact Assessment been undertaken? Does the public realm relate to NR Inclusive Design best practice?					
2	**Accessibility:** How can the public realm be as accessible as possible? Does the public realm relate to NR Inclusive Design best practice?					
3	**Safety:** How can the public realm make people feel safe and welcomed? Can the public realm address any safety or security concerns?					
4	**Quality of Experience:** How can the public realm contribute to a positive passenger experience?					
5	**Flexibility:** How can the public realm adapt to differing passenger numbers so the station can accommodate passengers successfully?					
	TOTAL					

Environment

Green and Clean

How can the Public Realm support the Network Rail Environmental Sustainability Strategy vision to provide the greenest, cleanest mass transport system?

		Balancing the Priorities				
		Not relevant	Yes: Low Potential	Yes: Medium Potential	Yes: High Potential	Yes: Important Priority
		0	1	2	3	4
1	**Adapting to Climate Change:** How can the public realm address the cause and effect of our changing climate?					
2	**Reducing Carbon:** How can the public realm help reduce carbon usage?					
3	**Enhancing Biodiversity:** How can the public realm enhance biodiversity and nature recovery?					
4	**Reducing waste:** How can the public realm contribute to reducing levels of waste?					
5	**Air Quality:** How can the public realm contribute to improving air quality?					
	TOTAL					

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Community

Socially engaging spaces

How can the Public Realm help develop socially engaging spaces that unlock community benefit?

		Balancing the Priorities				
		Not relevant	Yes: Low Potential	Yes: Medium Potential	Yes: High Potential	Yes: Important Priority
		0	1	2	3	4
1	**Enabling interaction:** How can the public realm provide spaces where communities can interact?					
2	**Enhancing wellbeing:** How can the public realm enhance community well-being?					
3	**Contributing to community life:** How can the public realm positively contribute to local community life?					
4	**Adaptability:** How can the public realm adapt to changing uses?					
5	**Consultation:** How can stakeholder consultation be considered in the development of the public realm?					
	TOTAL					

Commercial

Supporting the Local Economy

How can the Public Realm support the local economy and generate commercial revenue?

		Balancing the Priorities				
		Not relevant	Yes: Low Potential	Yes: Medium Potential	Yes: High Potential	Yes: Important Priority
		0	1	2	3	4
1	**Generating Interest and Attracting Tenants:** How can the public realm improve commercial opportunities by providing uses to generate interest and attract tenants?					
2	**Event Infrastructure:** How successful is the public realm in providing event infrastructure? Is there scope to further enable temporary, pop up and low investment events?					
3	**Stimulating the Local Economy:** How can the public realm stimulate the local economy by forging links with the local community to encourage investment and provide support?					
4	**Local Relationships or Partnerships:** How can the public realm improve or create relationships or partnerships with local retail or local authority facilities?					
5	**Social Capital:** How can the public realm facilitate social capital or to develop this further?					
	TOTAL					

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Interchange

Inter-modal Connections
How can the Public Realm optimise the local operation of the transport system

		Balancing the Priorities				
		Not relevant	Yes: Low Potential	Yes: Medium Potential	Yes: High Potential	Yes: Important Priority
		0	1	2	3	4
1	**Pedestrian Experience:** How can the public realm be easy, comfortable and safe as an interchange experience for all pedestrians?					
2	**Modes of Public Transport:** How can the public realm be safe, legible and comfortable as a public transport interchange experience at the same time as enhancing and activating the public realm?					
3	**Emergency and Delivery Vehicles:** How can emergency and delivery vehicles access the station safely?					
4	**Cycle / Scooter Experience:** How can the public realm create a safe, legible and comfortable cycle / scooter experience?					
5	**Shared and Private Vehicle Experience:** How can the public realm rationalise traditional private vehicle usage in favour of more sustainable modes of transport whilst still providing for or those that require it?					
	TOTAL					

Placemaking

Sense of Place
How can the Public Realm positively contribute to place making

		Balancing the Priorities				
		Not relevant	Yes: Low Potential	Yes: Medium Potential	Yes: High Potential	Yes: Important Priority
		0	1	2	3	4
1	**Heritage:** How can the public realm convey the heritage of the place and enhance the visual, physical and emotional relationship and enrich the narrative of railway assets for future generations?					
2	**Cultural Identity:** How can the public realm celebrate the cultural identity of the locality to improve the visual, physical and emotional relationship?					
3	**Natural and local resources:** How can the public realm use the natural and local resources to improve the visual, physical and emotional relationship?					
4	**Local Context:** How can the public realm represent its relationship to the local context?					
5	**Network Rail Identity:**How can the public realm convey the visual, physical and emotional relationship to Network Rail's identity?					
	TOTAL					

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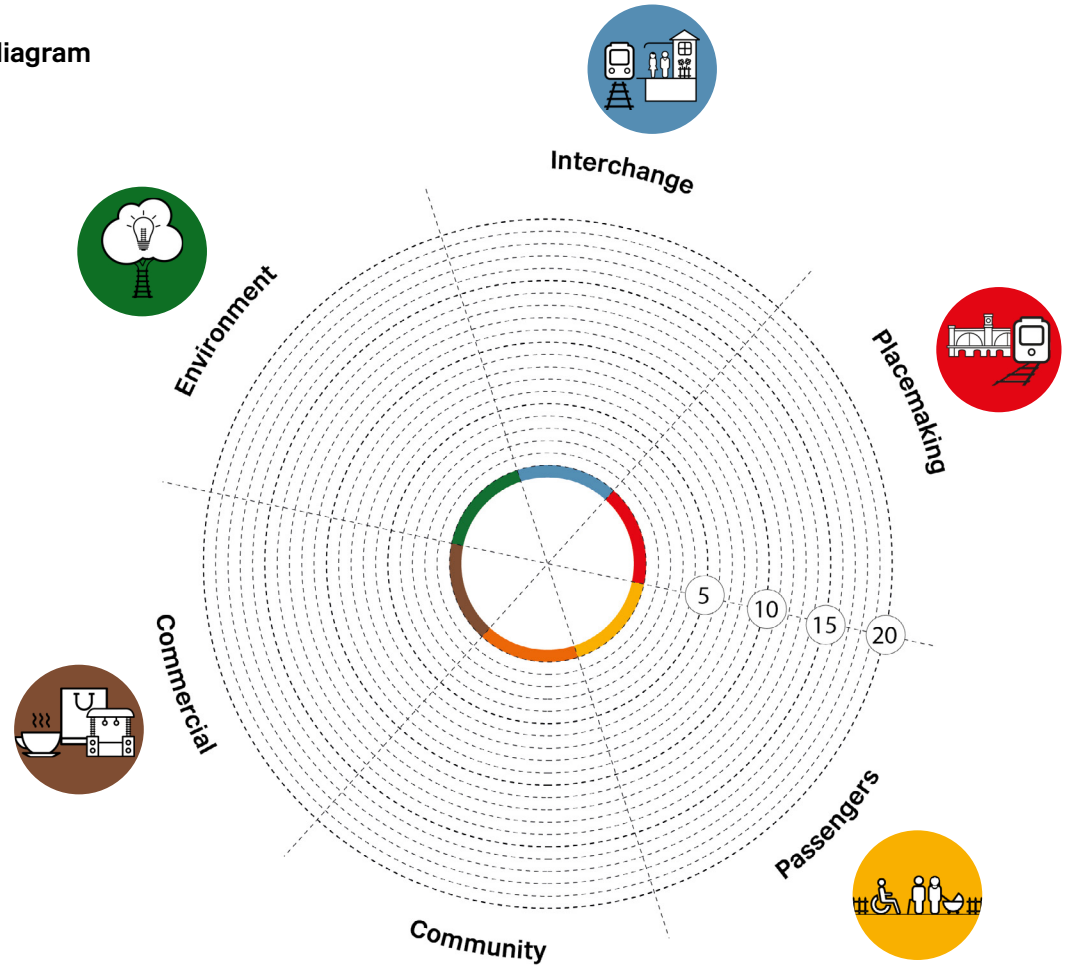
Blank Sunburst diagram



Link to the 'sunburst' consideration tool

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Example 1 - Station improvements
Improvements to an existing station.
Transport is a priority focused on allowing buses to access the station, creating spaces for taxis and improving facilities for pedestrians and cyclists.

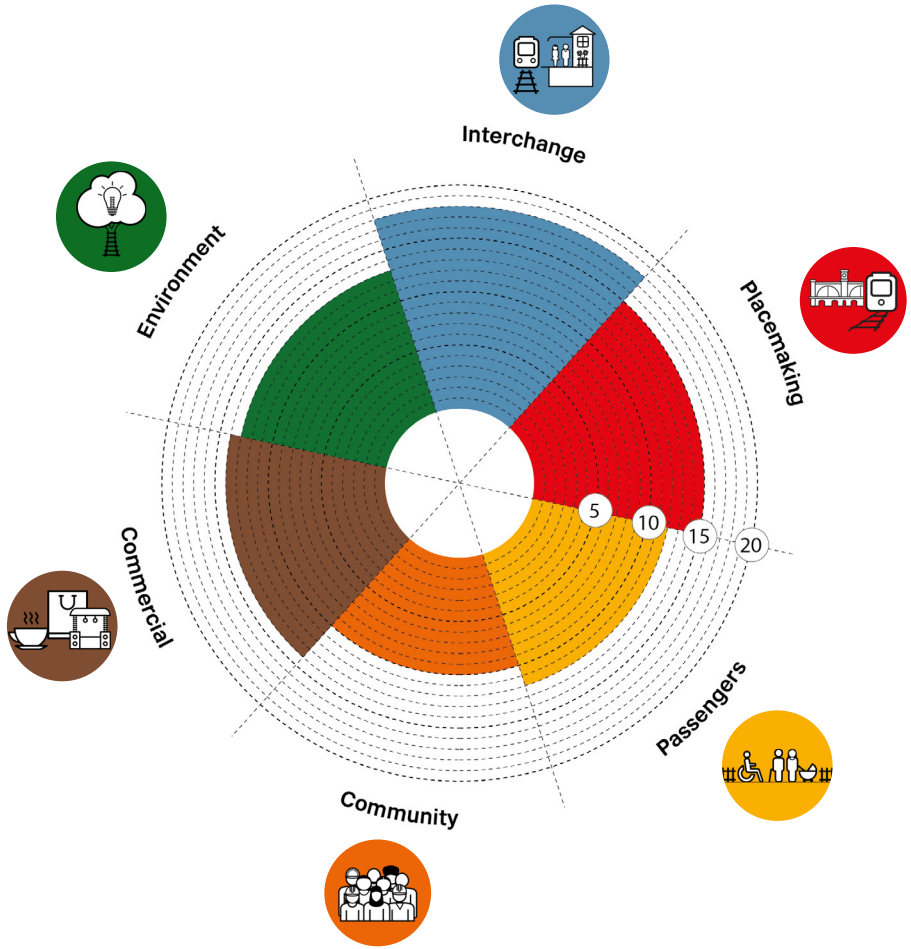
There is the opportunity for placemaking as part of the provision of an enhanced forecourt to form part of a wider project and enhanced sense of place and identity by conveying the existing heritage assets.

There is an opportunity for the café, which is currently mobile and parked outside the station, to be rehomed within the Network Rail owned station buildings.

The diagram highlights that despite one consideration being a definite priority the others are still important to consider. In this scenario - Environment, Passengers and Community scored slightly less but they are all still key considerations that should be addressed as part of the project to confirm the benefit of the project is maximised.

Using the scoring table to score the priorities:

- Interchange: Table total = 18
- Placemaking: Table total = 15
- Community: Table total = 10
- Commercial: Table total = 14
- Passengers: Table total = 12
- Environment: Table total = 13



Public Realm Considerations Tool

Example 2 - Station refurbishment and expansion.
The station currently functions well for most modes of transport but as the station is expanding some extra facilities are required.

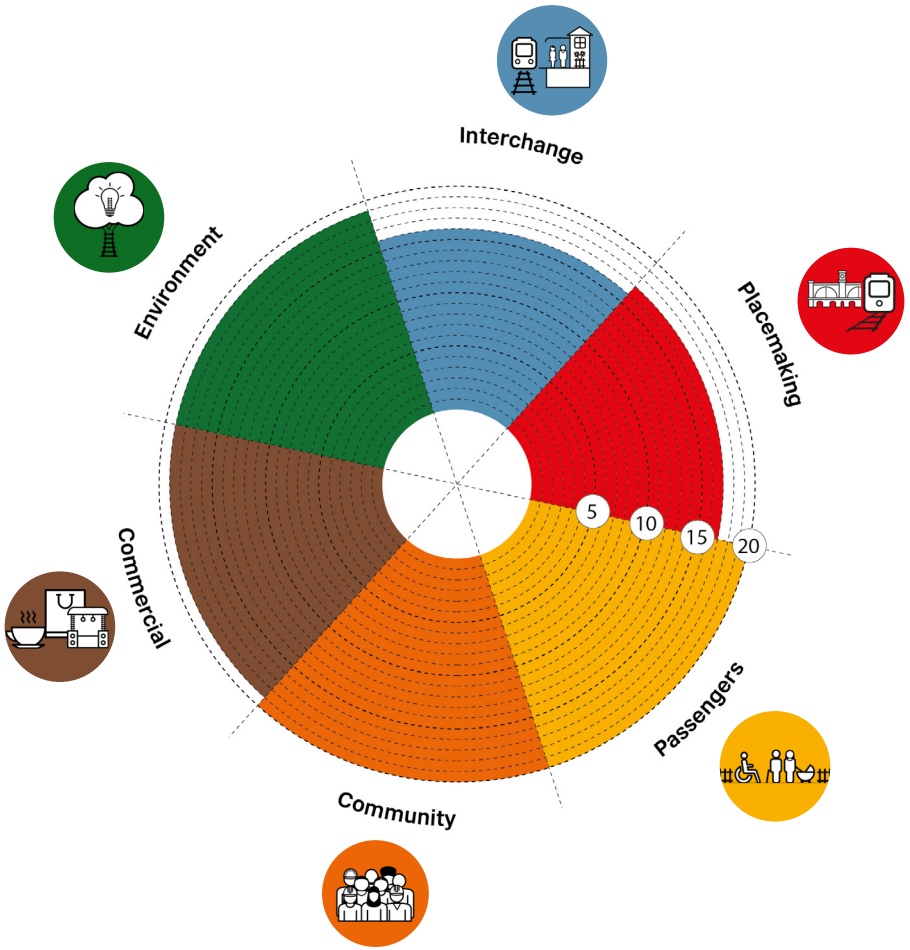
The station currently has little interaction with the community and no commercial offer so there are lots of opportunities to enhance this.

The environment was not a key concern when the station was first built but now this will be a key consideration in the refurbishment and expansion. Due to major new developments there are more passengers using the station, the refurbishment provides an opportunity to address passenger considerations and capacity.

The diagram highlights how all the considerations are relevant and a priority. The project vision should incorporate all the considerations and confirm design decisions reflect these.

Using the scoring table to score the priorities:

- Interchange Table total = 16
- Placemaking Table total = 17
- Community Table total = 20
- Commercial Table total = 19
- Passengers Table total = 20
- Environment Table total = 19



Public Realm Considerations Tool

Example 3 - Barriers to pedestrian accessibility
The station currently functions well but there are a series of barriers preventing the station being accessible to all.

The diagram highlights that the priority for the project is focused on the Passenger consideration which also relates to the Interchange considerations about pedestrians.

The other considerations aren't as relevant for this project, however, the process has highlighted a couple of areas that could be considered at the same time to maximise benefits.

Using the scoring table to score the priorities:

- Interchange: Table total = 9
- Placemaking: Table total = 1
- Community: Table total = 2
- Commercial: Table total = 0
- Passengers: Table total = 14
- Environment: Table total = 4

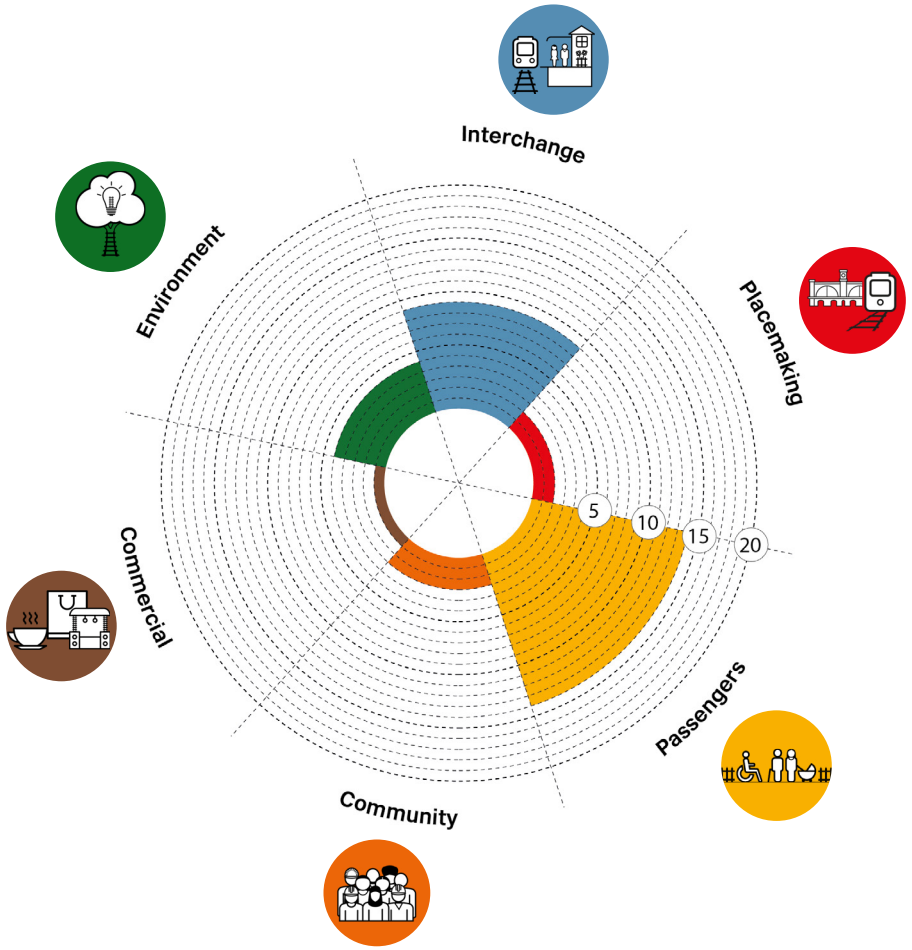


Image AD.1
Bee friendly planters on Putney station in West London installed by the Bee Friendly Trust charity to increase forage for urban bees

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