TEESWORKS

DESIGN GUIDE FOR DEVELOPMENT

ACKNOWLEDGEMENTS

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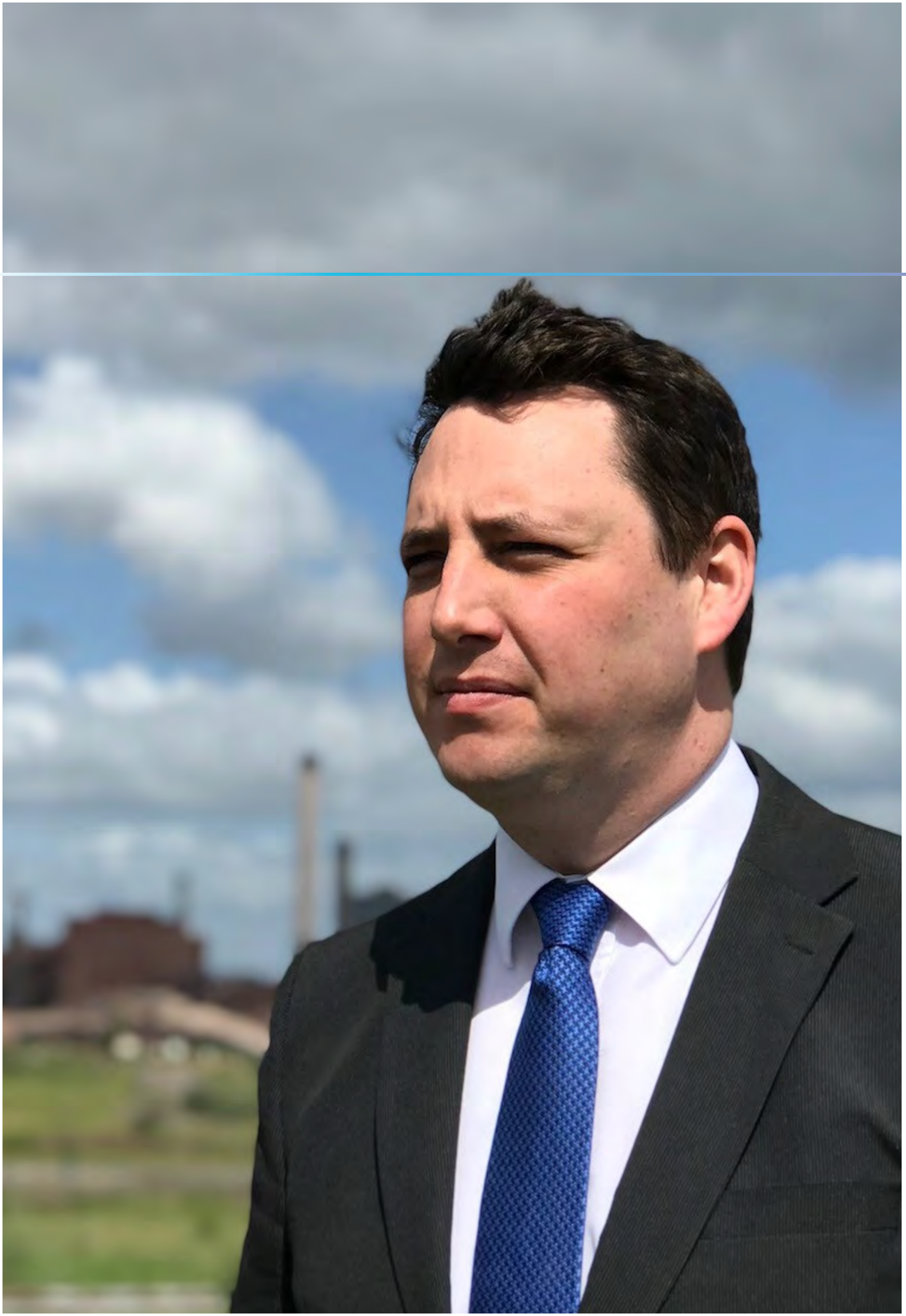


FOREWORD

Innovation and advanced technologies have been the hallmark of industry and manufacturing in England's Northeast.

Teesworks is the UK's largest and most connected industrial zone, home to diverse, sustainable and low-carbon activity and has been set up to promote the economic growth and commercial development of the Tees Valley by converting assets in the South Tees area into opportunities for business investment and economic growth.

At Teesworks we are creating a world-class centre for new and green technologies which will form part of the development to be the UK's first decarbonised industrial cluster.

The 4,500 acre site is already home to major global brands within logistics, shipping, bulk materials, steel, chemical and gas processing as well as Manufacturing and Logistics. Offering immediate connectivity to Teesport, the North Sea and global markets, this multi-sector setting brings together global leaders and innovative pioneers ready to power Britain's hydrogen transport and carbon capture capital.

The site is steeped in industrial and local heritage and has blessed Teesside's skylines for generations. The cosmetic, aesthetic and sustainable delivery of our future developments on site is critical to our future success.

The Design Guide for Development has been prepared to simplify the planning process and bring clarity to how design proposals will be evaluated. By using the Guide, you will ensure that your proposals are closely aligned to our ambitions for design excellence as well as business excellence at Teesworks.

The Guide has been developed in close consultation with key decision makers at Teesworks, Teesworks, the Tees Valley Combined Authority Group and our colleagues at Redcar & Cleveland Borough Council, who act as the planning authority and who will issue planning approvals for new developments. Therefore, by following this guidance, developers and designers will also be more likely to gain the full support and endorsement of the planning process resulting in quicker determination and more certainty regarding the outcome.

We look forward to working with you at Teesworks to transform Tees Valley, drive economic growth and create jobs for the people of Teesside, Darlington and Hartlepool.

Ben Houchen,
Tees Valley Mayor
November 2020

CONTENTS

TEESWORKS VISION

A.1 THE VISION FOR SOUTH TEES

The vision for Teesworks is of a world-class hotbed of new industry and enterprise, centred on manufacturing innovation, advanced technologies, energy and green industries best able to deliver sustained economic prosperity for the UK, the Tees Valley and its people.

The Vision is underpinned by the aspiration for new development to deliver a high value, low carbon, diverse and inclusive circular economy for the Tees Valley. This will be made possible by the large scale and excellent connectivity of the South Tees site, which will include rail, port, and site-wide utility infrastructure.

The realisation of the vision for Teesworks will be the delivery of an exemplar, world class industrial business destination that is renowned for manufacturing excellence. This will be achieved, in part, through the dedicated delivery agency of Teesworks and this document, their Design Guide for Development. The guide will help to deliver high quality buildings, landscape, and public realm to support the wider aspirations for South Tees.

VISION

- An exemplar world-class destination for manufacturing and industrial excellence;
- The largest opportunity of its kind in the UK, offering multi-modal connectivity including road, rail, sea and air;
- Servicing global markets offering sustained economic growth;
- A hotbed of new industry and enterprise and a focus for innovation and new technologies;
- A high-value, low carbon, circular economy with a scale and diversity of business that delivers real agglomeration benefits.

ASPIRATIONS

- A high quality business environment, with infrastructure, amenities and architecture commensurate with the global and national repute of companies located at Teesworks;
- Emphasis on higher skilled sectors and occupations, centred on manufacturing innovation and advanced technologies;
- Sustained and inclusive growth and prosperity for business and the communities of the region, more than 20,000 new jobs, with opportunities for all;

VALUES

- A collaborative ethos to doing business, fuelling innovation and growth;
- An environmentally responsible approach, promoting and encouraging environmental improvement and bio-diversity;
- Resilience, managing economic and environmental challenges through scale, diversity of business, dedicated infrastructure networks and proactive management;
- A socially inclusive development, welcoming businesses and their people from around the globe to work with and alongside the skilled communities of Northeast England.

A.2 CONTEXT

The Teesworks site extends to almost 4,500 acres (1,800 hectares) and is situated within a wider industrial zone in the north-east of England, at the mouth of the River Tees. The town of Middlesbrough lies to the west of the site, and the regional capital, Newcastle, is 45 miles or 45 minutes to the north.

The Northeast of England and the Tees Valley have a long history of world class industry and engineering, and the global businesses already located at Teesworks include British Steel, PD Ports, TATA, BOC and Sembcorp.

The continuing evolution of industry in the Northeast of England has led to the opportunity for new businesses and industries to locate at Teesworks, supported by a dedicated business delivery team that works with local and central government agencies to realise the development potential of the South Tees area, and to deliver the Teesworks vision and masterplan.

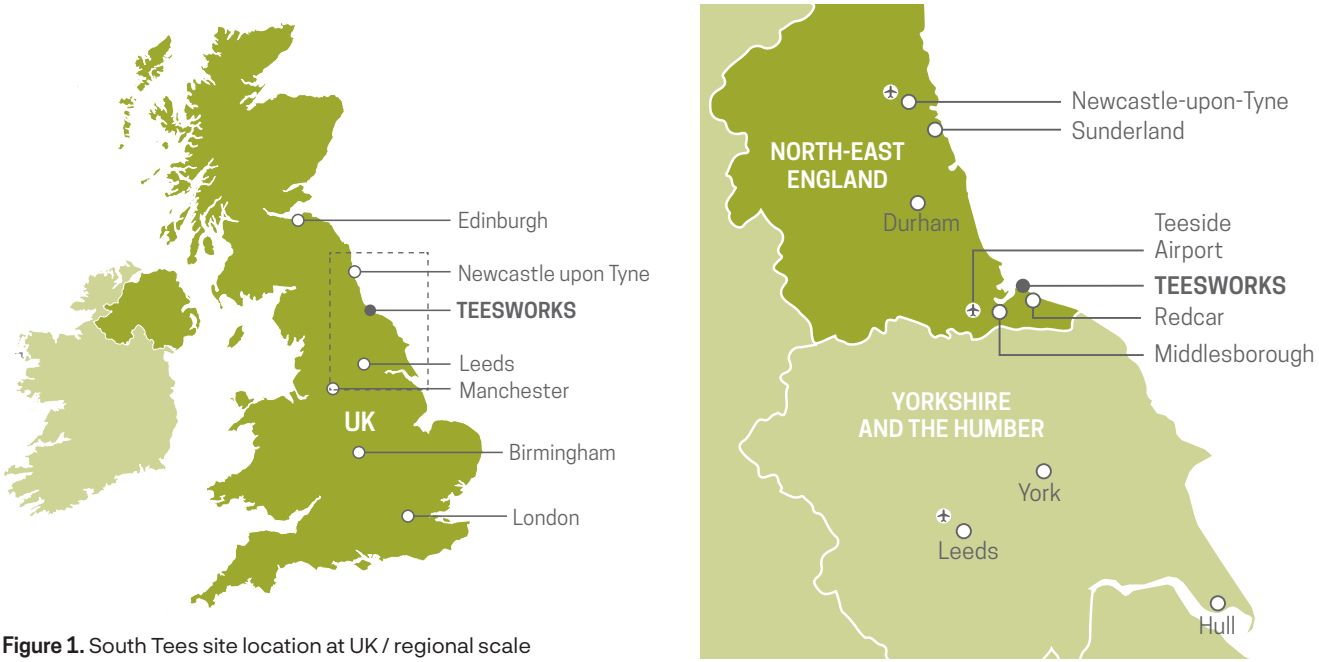


Figure 1. South Tees site location at UK / regional scale

THE MASTERPLAN FOR SOUTH TEES

A masterplan framework guides development at Teesworks. The masterplan establishes the major infrastructure for the site and outlines the range of industries that can be accommodated. The nature of the often unique and large-scale businesses that Teesworks attract means that the masterplan framework is flexible. The Teesworks delivery team will work with businesses and regulatory agencies to ensure the best fit of business requirements and available sites within the masterplan. The flexible nature of the masterplan makes the Design Guide for Development and other Teesworks strategy documents particularly important in ensuring the coherent and successful evolution of the site as a whole.

Figure 2. Illustrative Development Plan

A.3 PROPOSED DEVELOPMENT ZONES

The South Tees Regeneration masterplan established five principal zones for development based on the geographical characteristics and likely target industries (Figure 3). These zones have susequently been updated to reflect the Teesworks Development Plan (Figure 4).

NORTH INDUSTRIAL ZONE (NIZ): REDCAR BULK TERMINAL (RBT)/ THE FOUNDRY/ NET ZERO TEESIDE

This zone is formed from the former Redcar Works complex and incorporates the Redcar Bulk Terminal.

Potential uses for these development zones include bulk materials handling, mineral processing, energy innovation, and large-scale manufacturing.

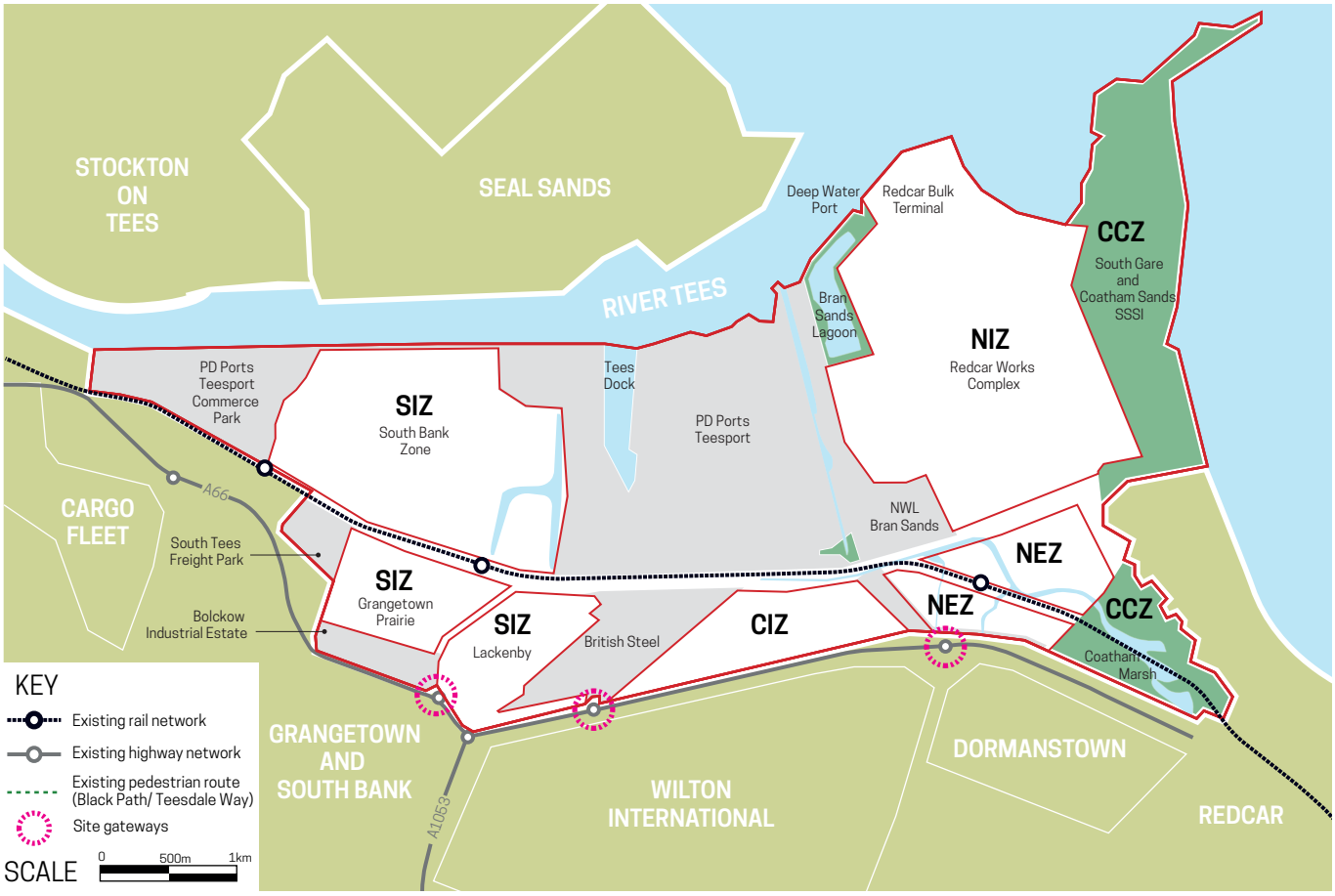
NORTH EAST INDUSTRIAL ZONE: LONG ACRES / STEEL HOUSE

This zone includes the underutilised land around the River Fleet to the north of the infrastructure and rail corridor and the existing Steel House complex to the south.

Potential uses for this development zone include a research and innovation centre, training facilities, and manufacturing.

The location of the passenger rail station and vehicular access off the Trunk Road offers potential for a gateway hub development. The Fleet watercourse offers potential for an enhanced, central open space for water retention, wildlife and passive and active leisure uses.

Figure 3. Development zone nomenclature used in the South Tees Supplementary Planning Document (SPD). Refer also to the revised Teesworks zones as shown in Figure 4 opposite.



CENTRAL INDUSTRIAL ZONE (CIZ): LACKENBY

The Central zone sits adjacent to an extensive array of largely non-utilised existing rail freight infrastructure, offering connectivity to multiple rail spurs and a potential location for rail-related industries.

The Teesworks development plan expands the CIZ to include the former steelmaking complex at Lackenby.

SOUTH INDUSTRIAL ZONE (SIZ): SOUTHBANK / DORMAN POINT

This zone is comprised of South Bank and the area known as Grangetown Prairie, where a new roundabout and vehicular gateway is proposed.

Southbank offers a large development area for port-related uses and offshore wind manufacturing, alongside the areas reserved for landfill and open space. To the south of the rail and infrastructure corridor, Dorman Point offers further development potential for manufacturing and/ or energy generation.

COASTAL COMMUNITY ZONE (CCZ): SOUTH GARE

The masterplan proposes the establishment of a defined Coastal Community Zone by creating a link between South Gare/ Coatham Sands and Coatham Marsh.
This offers opportunities for environmental enhancement and habitat improvement, improved, controlled accessibility to the public and the introduction of discrete leisure uses.

Figure 4. Development zones identified in the Teesworks development plan (2020).

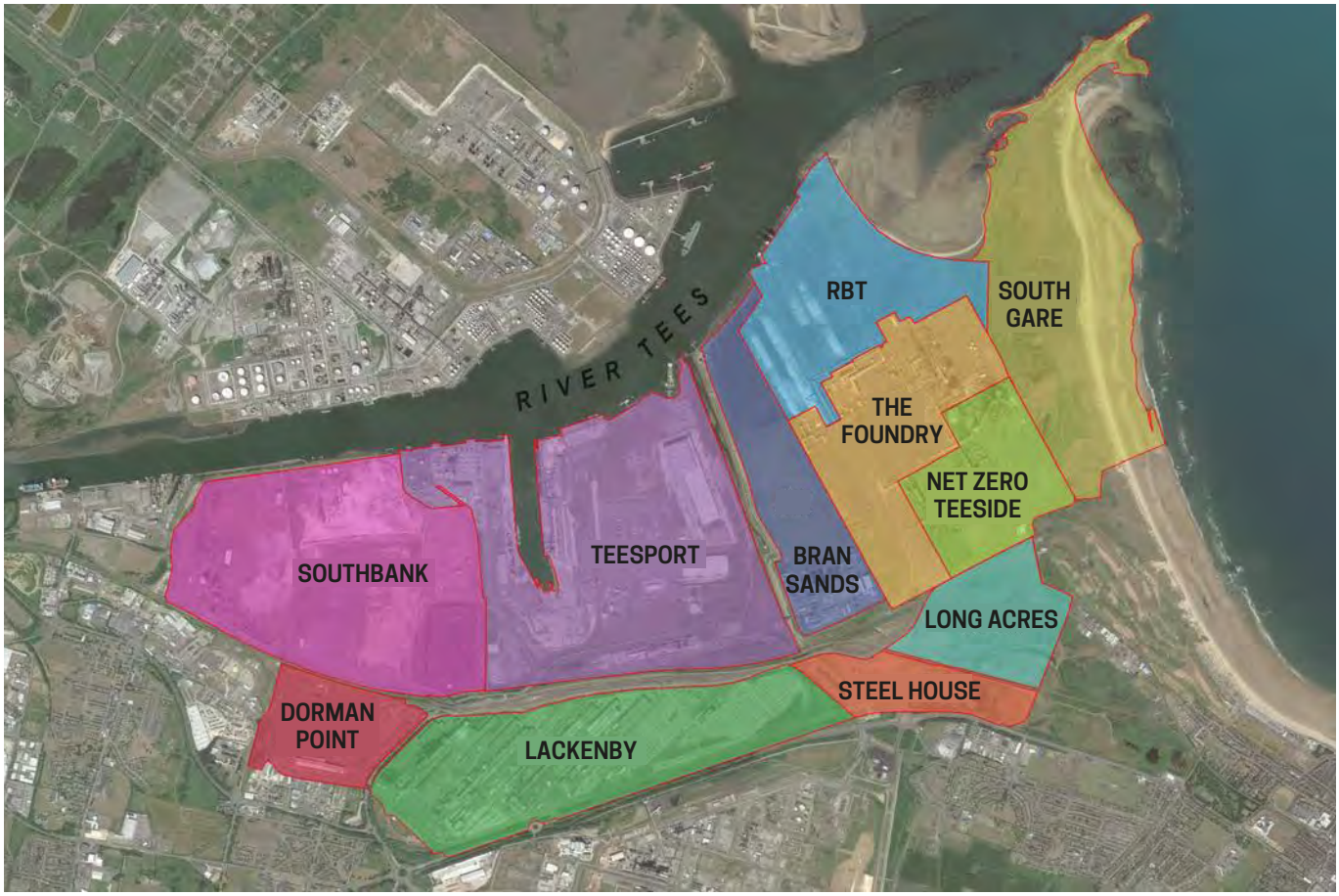


Figure 5. High quality planting and public realm plays a vital role in enhancing the setting of new development.

A.4 LANDSCAPE AND PUBLIC REALM STRATEGY

The creation of well-designed landscape and public open space will be a significant contributor to realising the vision for a high quality, world class industrial business park environment. It will help to create an exemplar location for Manufacturing and Logistics, technology and innovation, while preserving aspects of the existing fabric to ensure the area's industrial heritage is not lost.

Alongside the Design Guide for Development, a number of Teesworks strategy documents have been developed to cover areas of infrastructure and open space beyond development plot boundaries. This subsection provides an overview of the landscape and public realm strategy, which is particularly significant in terms of the relationship with the design of individual plots and buildings.

The Landscape and Public Realm strategy covers aspects including, key movement routes, greening, biodiversity wayfinding, and lighting.

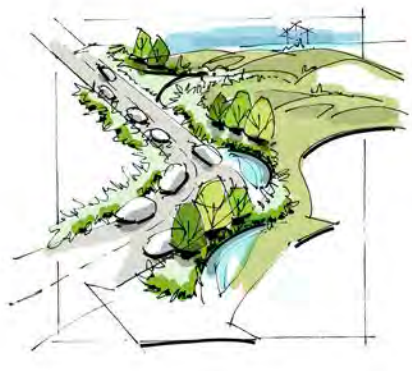
The public realm strategy will be used to reinforce the character and identity of the different development zones (outlined in section A3).

GATEWAY TO DESTINATION

Key routes through the masterplan will link gateways, entrances and potential destinations to one another. Planting will be used to define key connections to greenspace, support water management, and define areas of habitat creation.

GATEWAY HUBS

Gateway hubs are created where key routes intersect the movement corridor. Gateway hubs become focal points within the masterplan and act as markers to define the gateways to the development zones.



REINFORCED BY GREENING

Primary routes are characterised through the use of greening , planting, water management, and habitat creation. They will link into the broader network of greenspaces, designated zones, and existing pedestrian routes including the Black Path / Teesdale Way.

CONCEPT STRATEGY

The Teesworks masterplan is divided into a series of development zones each defined by their intended use and the objectives set by the vision for the area (see section A.3). Masterplan zones are connected by the spine route or 'movement corridor' which cuts through the middle of Teesworks. The movement corridor broadly follows the existing road/ rail infrastructure and the Black Path / Teesdale Way.

The concept strategy for Landscape and Public Realm has been developed in line with the following guiding principles:

- Due to the scale and nature of infrastructure, the 'movement corridor' is primarily a transitional route, defined by keys views of gateways and architectural markers.
- Smaller public spaces will be integrated along the existing Teesdale Way / Black Tees Path, and defined by pedestrian walking routes; these are considered as 'pause points' and not functional public open spaces.
- Key gateways or 'hubs' along the movement corridor are used to highlight entrances to the individual development zones ('Character Areas').
- Each Character Area will have a central gateway hub space, which is to be functional by nature, and will include/ integrate car parking, transport connectivity or other functions.
- Primary and secondary routes within the Character Area are opportunities for greening and biodiversity, which will tie into the site-wide ecology and water management strategies.
- Each Character Area will be given a distinctive identity, created through the use of branding, colour, wayfinding, lighting and other street furniture within the public realm.

A seperate Public Realm Design Guide has been produced to illustrate the application of this concept to the Teesworks. The key interface of the public realm strategy and this Design Guide for Development is in relation to plot boundaries and markers.

PLOT BOUNDARIES AND MARKERS

The relationship between public realm and individual development plots is key to the creation of a coherent and high-quality environment. This relationship will vary depending on the plot location within the masterplan and the plot typology (refer to section C). However it will be based on a clear set of design principles established in the Landscape and Public Realm Strategy. This will set out the parameters for each route type (primary / secondary / tertiary) for footpaths/ cycle lanes, planting zones and types, lighting and wayfinding. The public realm strategy will cross-reference other strategies for ecology, utilities, transport, and water management.

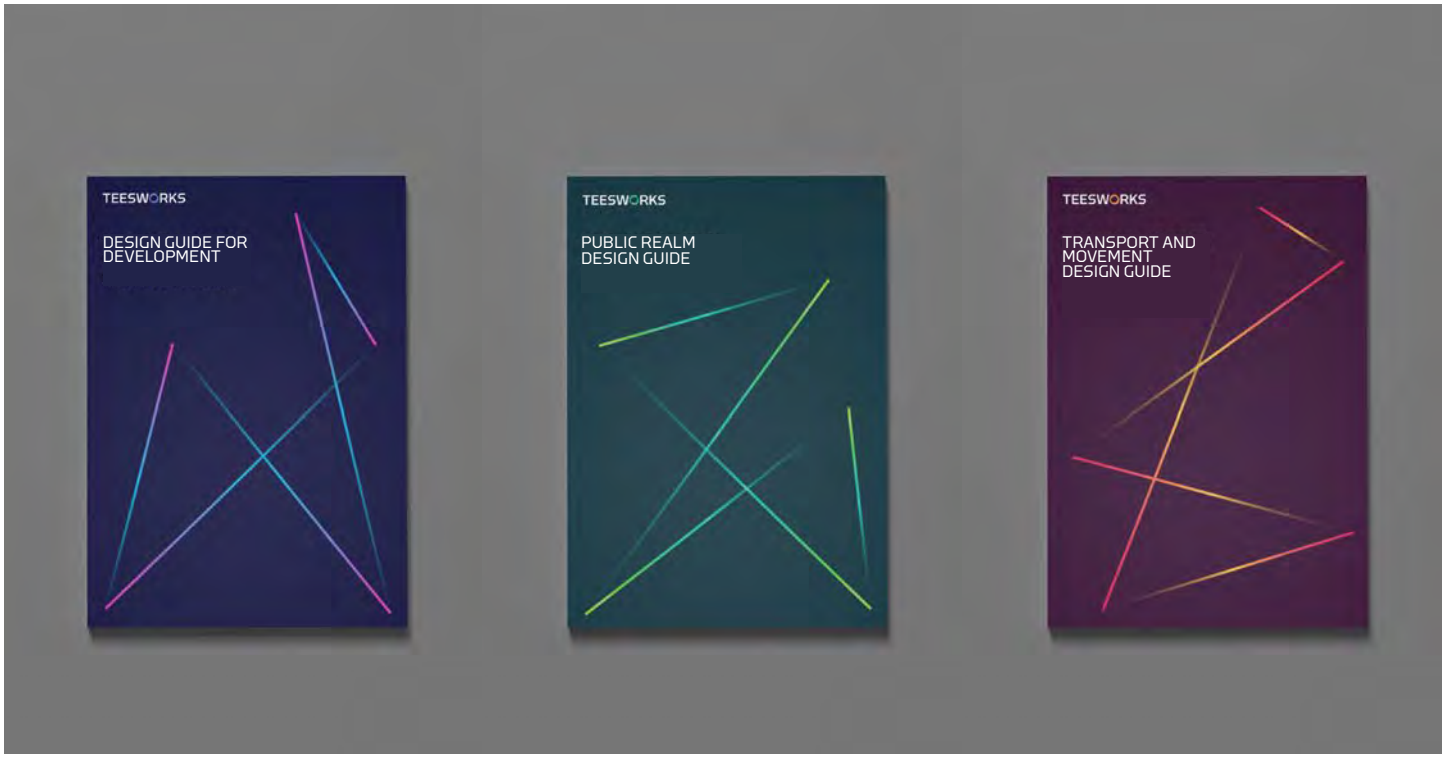
Note these examples are indicative only and will be subject to specific requirements within the Character Area, route type and plot location within the masterplan. Further details on appropriate boundary treatments for development plots are provided in section C.2.

A.5 THE SUITE OF DESIGN GUIDES

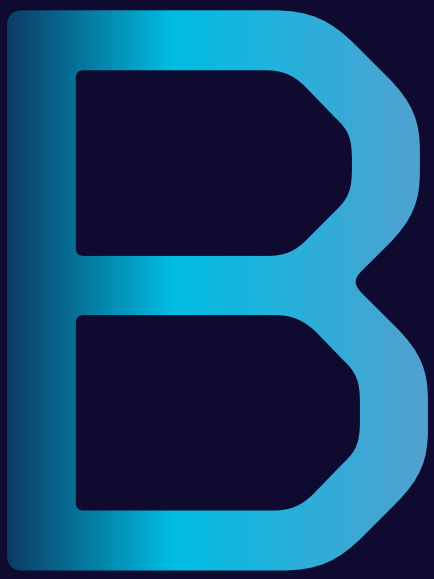
A number of Design Guides have been prepared to aid businesses, developers, and designers in preparing their proposals for development at Teesworks, in order that these align with the wider masterplan and aspirations for the site.

This document, the Design Guide for Development, is one of the suite of dcouments that should be referred to and is of particular relevance to the design process and the submission of planning applications.

The range of guidance available is being added to all the time and reference should be made to the Teesworks website https://teesworks.co.uk for the latest availability.



THE VALUE OF GOOD DESIGN



Teesworks will be a world-class destination for industry and business, offering a rare combination of a large land area, excellent multi-modal connectivity and a growing presence of global businesses engaged in advanced and green manufacturing and energy industries.

The creation of a modern business environment, expected by global business, will be essential to the ongoing success of the location.

The Design Guide for Development will contribute to this objective through reference to best practice and future trends in industry and workplace environments.

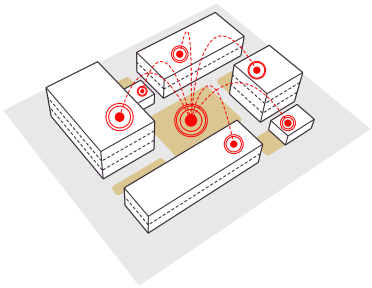
An overarching theme that runs through these trends is a vision of business and industrial parks as sustainable, attractive places to work and visit, with technological innovation opening up new opportunities for businesses and their workforce to connect and collaborate.

B.1 TRENDS IN URBAN AND BUILDING DESIGN FOR INDUSTRY AND WORKPLACE

The following key trends have been distilled from a range of research and planning documents looking at the future of business and industrial parks.

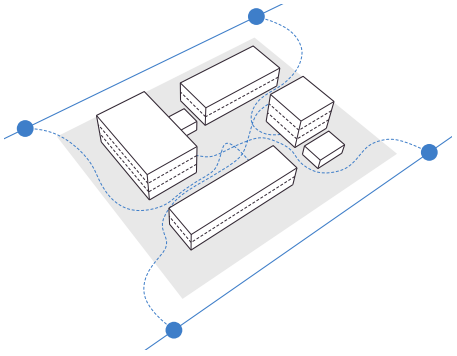
CONNECTIVITY AND COLLABORATION

- Moving from siloed businesses to a more connected and collaborative environment.
- Facilitating entrepreneurial and training networks.
- Extending ecosystems and connections outwards.



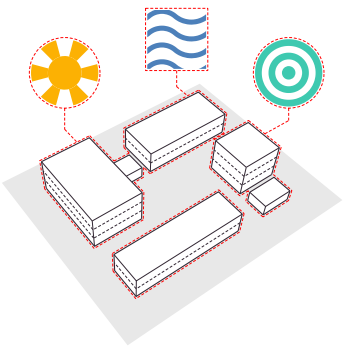
ACCESSIBILITY

- Growing emphasis on sustainable and active transport modes (train/ shuttle bus / cycle / walk).
- Moving beyond the private car as the main mode of (commuter) transport.
- Integration of smart transport solutions including automated and driverless technologies.



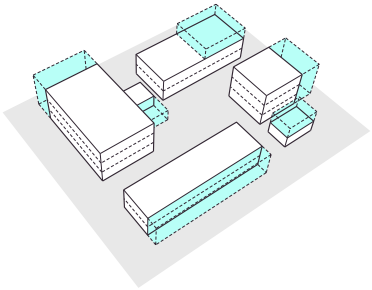
SUSTAINABILITY

- Reducing the reliance on fossil fuels through low carbon design and renewable energy.
- Improving business resilience to climate change.
- Promoting a low-carbon environment as a defining aspect of branding (making innovation visible).



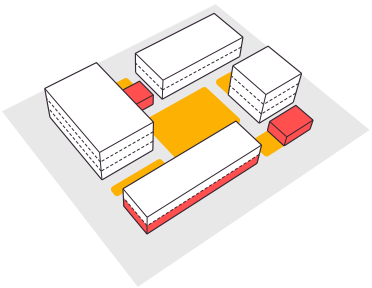
FLEXIBILITY AND ADAPTABILITY

- Space planning to allow for rapid future expansion without need to relocate.
- Greater variety in provision of building types and in flexibility of buildings to respond to changes in the economy (change in use).
- Responding to demand for diverse space and plot typologies (one size does not fit all).



AMENITY

- Support for mixed-use environments (extending use beyond nine-to-five).
- Provision of social hot-spots to facilitate interaction.
- Aligning with identity and lifestyle (wellness / sport / creative / cultural).



NATURE AND WELLBEING

- Promoting staff well-being as a means to greater productivity and retention.
- Access to nature as a key differentiator from urban locations (healthier and greener).
- Integration of industrial environments and leisure uses

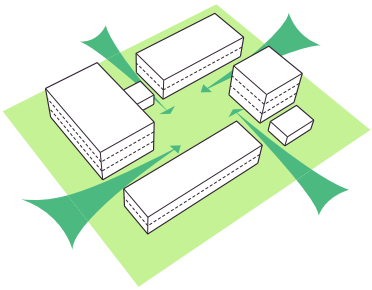


Figure 6. Design quality is essential to create attractive and successful workplaces.

B.2 THE PURPOSE OF THE DESIGN GUIDE FOR DEVELOPMENT

The primary purpose of the design guide is to provide guidance to design teams that will ensure that individual development proposals contribute positively to the development of the Teesworks vision for a high quality and well-designed industrial district.

The central purpose of the Design Guide for Development is to enhance the quality of urban and building design in Teesworks and ensure that development proposals for new investment and business are of high design quality.

That means designing attractive, inclusive, safe, welcoming, and sustainable buildings and environments that relate positively to their surroundings.

The key objectives of this design guide can be summarised as follows:

- To promote good building design through the design, planning and development process;
- To attract investment in high quality employment development;
- To meet the needs of business and create attractive and successful workplaces;
- To ensure that developments are appropriate to their context and contribute positively to the character and built environment of Teesworks;
- To ensure that developments are well connected, inclusive and accessible;
- To ensure a sense of safety and security within development plots and the public realm;
- Through adherence to the guidance, increase the success of planning applications;
- To encourage more sustainable and lower carbon development that meets the Teesworks sustainability targets (refer to separate guidance documents).

This Design Guide for Development has been prepared to inform industry, investors, developers and their professional design teams, in formulating development proposals that will meet the objectives of Teesworks and be supported through the planning application and approvals process.

Further details of the application of the guidance in practice are provided in Appendix D.2 - The Planning, design review and decision-making process.

B.3 HOW TO USE THIS GUIDE

The Design Guide for Development has been written as a set of easy to understand principles and related recommendations for good design that developers and design teams can use to develop their proposals. The guidance has been created following a review of existing good practice guidance, future trends in industrial and business park developments, and established urban design criteria that characterise good placemaking.

The four design principles and the associated questions are as follows:

1. PLOT ARRANGEMENT AND ACCESS
- Does the proposal relate well to its surroundings?
- Is the site accessible to all and easy to move around?
- Does the plot layout and arrangement of buildings form a coherent structure?
- Is the proposal located on a Gateway Plot?

2. BOUNDARIES AND LANDSCAPE
- Do the proposed boundary treatments relate well to their surroundings?
- Does the landscape setting enhance the proposed buildings?

3. BUILDING FORM AND MATERIALS
- Are the proposed buildings and materials functional and attractive?
- Are the proposals adaptable and robust?

4. COLOUR, LIGHTING AND SIGNAGE
- Does the proposal create a distinctive sense of place?
- Are colours and signage used in a coherent way?

The guidance is intended to be applied proportionately across the Teesworks industrial zone depending on the building typology and location within the site.

The most visible areas of the site are referred to with the guidance as 'Gateway plots'. These are plots that will make a significant contribution to the way that the overall development is perceived and will help to create an outward looking and welcoming environment.

For the purposes of this design guide, a Gateway plot is defined as a development plot that has a significant visible frontage onto the infrastructure corridor or other primary route (see illustrative diagram in Figure 4). Gateway plots are not fixed in the masterplan but will be determined by Teesworks in line with the Public Realm strategy and emerging development opportunities.

Alongside the four principles, additional guidance is provided for the four major plot typologies. This is designed to aid the designers and developers of specific industrial building types where certain principles may be particularly important (or, in some cases, not applicable).

Photographs of relevant projects are included within the guidance alongside explanatory diagrams. Project photographs are intended to illustrate specific design features and do not necessarily represent the full range of building types within each plot typology.

Technical design criteria relating to energy performance, transport, water management, waste, and ecology are beyond the scope of this design guidance and will be covered by the suite of Teesworks strategy documents.

Please note that the guidance cannot cover all situations, and developers and their agents are invited to discuss proposals with Teesworks in accordance with the process outlined in Appendix D.1.

DESIGN PRINCIPLES

PLOT ACCESS AND ARRANGEMENT

BOUNDARY AND LANDSCAPE TREATMENT

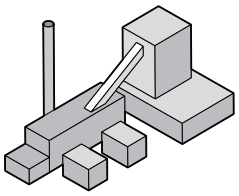
BUILDING FORM AND MATERIALS

COLOUR, LIGHTING AND SIGNAGE

PLOT TYPOLOGIES

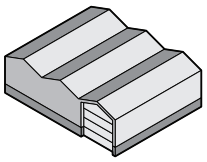
LARGE-SCALE INDUSTRIAL OPERATIONS

- Steelmaking
- Metals recycling
- Bulk materials processing
- Major energy generation
- Heavy/ materials manufacturing



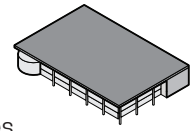
MANUFACTURING AND LOGISTICS

- Automotive manufacturing
- Component manufacturing
- Equipment manufacturing
- Logistics and distribution



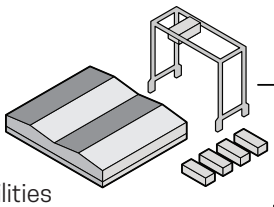
RESEARCH AND INNOVATION

- Research and development labs
- Industrial & technology training facilities
- Generic office space



PORT OPERATIONS

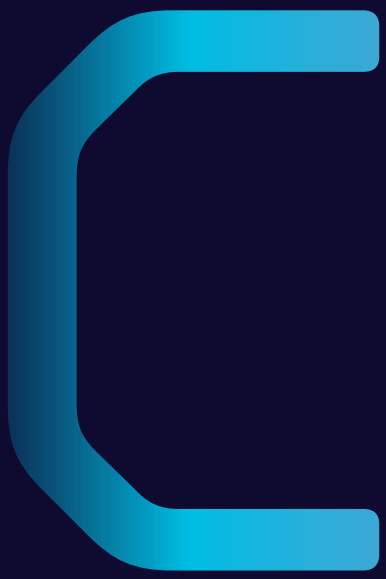
- Container terminals
- Cargo berths
- Offshore energy manufacturing facilities



TYPOLOGY-SPECIFIC RECOMMENDATIONS

GENERAL RECOMMENDATIONS

DESIGN GUIDANCE



DESIGN PRINCIPLES

A series of general design principles has been identified that can be applied across all types and scales of development. These principles fall into four categories:

C1. PLOT ACCESS AND ARRANGEMENT
C2. BOUNDARIES AND LANDSCAPE
C3. BUILDING FORM AND MATERIALS
C4. COLOUR AND IDENTITY

PLOT TYPOLOGIES

Four primary plot typologies have been identified which cover the anticipated developments within Teesworks:

C5. LARGE-SCALE INDUSTRIAL OPERATIONS
C6. MANUFACTURING AND LOGISTICS
C7. RESEARCH AND INNOVATION
C8. PORT OPERATIONS

The specific guidance for each plot typology is cross-referenced back to the four Design Principles for ease of application.

C1. PLOT ACCESS AND ARRANGEMENT

Well-designed workplaces and industrial facilities should make efficient use of land and sit comfortably in their setting, regardless of scale or function. Siting, layout, and orientation should be considered so that buildings respond positively to the topography and landscape, as well as surrounding buildings and access points.

C1.1 PLOT ACCESS

Plot access points and on-plot roads should be designed by a suitably qualified highways consultant to ensure safe access for all users and vehicle types.

Plot access points may require gatehouses or other secure control points. Parking and waiting areas should be considered to avoid vehicles waiting or parking on highways.

Pedestrian and cycle access should be kept segregated from vehicular access points. Where pedestrian and cycle routes cross vehicular routes or zones, crossing points must be carefully designed to ensure safety of all users.

Pedestrian and cycle access points should be integrated with the strategies for footpaths and cycle routes, public transport, and public realm around the site perimeter.

Adequate provision of secure, covered cycle parking should be located close to building entrances.

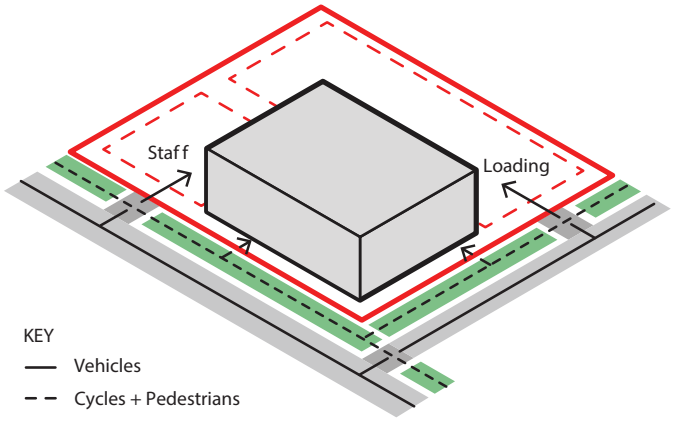


Figure 7. An optimal plot arrangement for a range of industrial building types separates the access for pedestrians, cycles, cars, and service/ loading vehicles.

C1.2 CAR PARKING

Areas of car parking for staff and visitors should be easily accessible from the highway network, appropriate in scale for the development and physically segregated from service and loading areas. Pedestrian routes from staff and visitor car parking to building entrances should be carefully considered to ensure safety of all users.

The quantity of staff and visitor car parking will be determined by specific business requirements and local planning policy.

Figure 8. Hard and soft landscaping used to separate vehicular routes and areas of car parking from building frontages.

Figure 9. Example of building frontage onto a primary route with car parking located to the rear.

There is a risk that surface car parking for staff and visitors can become visually dominant within an industrial or business park environment. The following measures should be considered to mitigate the visual impact of car parking:

- A buffer of hard/ soft landscaping should be employed as a means of separating areas of car parking and other vehicular routes from building entrances and principal frontages (in addition to minimum pavement widths). The extent of this landscape buffer will vary depending on the plot requirements but should be a minimum of 2m wide in order to accommodate tree/ shrub planting.

- Hard and soft landscaping should be used to break up large areas of car parking (refer to section C2.4).

Developers should also consider trends in sustainable transport, including the potential for reduced private car use. Plot layouts should consider the potential to convert surface car parks into future expansion or amenity space.

C1.3 SERVICE AND LOADING ZONES

The size and extent of service and loading zones should be appropriate to the scale and type of development. Service zones should ideally be located to the rear of development plots, away from principle frontages, outdoor amenity spaces, and areas of staff and visitor car parking.

Pedestrian routes around or across service zones should be carefully considered to ensure the safety of all users.

Figure 10. Pedestrian level access bridge to the building frontage separated from lower level service yard and car parking to the rear.

C1.4 BUILDING ORIENTATION WITHIN PLOTS

Buildings should be oriented in response to key axes - i.e. principal transport routes, plot boundaries, and significant topographical features of the development plot.

An axial arrangement of buildings produces a sense of cohesion between the various independent occupiers and allows for regular and efficient vehicular and pedestrian transport connections.

A common orientation to all buildings allows for environmental design strategies to be applied to deal with issues such as solar shading, glare control and overshadowing.

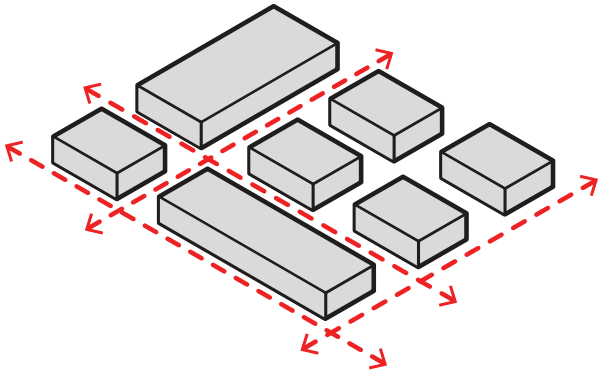


Figure 11. As a general principle, buildings should follow an axial arrangement determined by the road layout, plot boundaries, and topography.

C1.5 ARTICULATION OF KEY BUILDINGS WITHIN PLOTS

Divergence from the axial arrangement provides opportunities to respond to certain plot-specific issues or express the distinctiveness or status of key buildings.

Alternatively this can be achieved through the design of landscape forecourts, canopies or other architectural features.

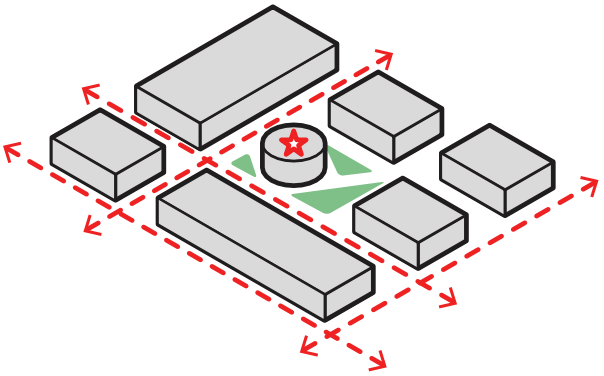


Figure 12. Key buildings or functions can be highlighted by breaking from the axial arrangement.

C1.6 PLOT RATIO AND EXPANSION

Specific plot ratios are not a requirement of this design guide as they will be determined by plot typology and functional requirements.

As part of the design process it should be demonstrated that plots are not over-developed such that servicing and/ or car parking will spill out into the public realm or highway.

Consideration of future expansion requirements should inform the masterplanning of development plots.

C1.7 PERIMETER PLOT ARRANGEMENTS

Perimeter plot arrangements are encouraged where building typology, servicing requirements, and plot ratio permit.

Perimeter plot arrangements are beneficial from an urban design and place-making perspective as they provide a frontage and sense of enclosure to the public realm while containing loading and storage areas to the rear of the plot.

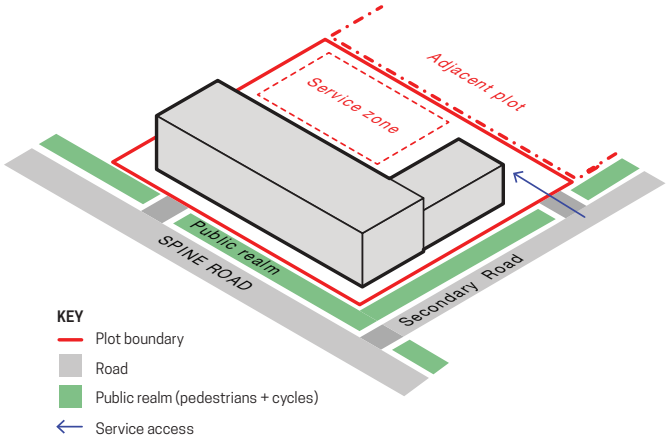


Figure 13. Perimeter plot arrangements use built form to reduce the requirement for secure boundary treatments and enclose service zones.

C1.7 GATEWAY PLOTS

Developments on Gateway plots should be oriented such that their main pedestrian entrances and inhabited spaces (e.g. office accommodation) address the principal frontages of the development plots - boundary conditions 'A' and 'B' indicated in the diagram opposite.

Where several buildings are developed on a Gateway plot, all building frontages should be set back the same distance from the principal conditions 'A' and 'B'. This distance should be appropriate to the building typology and site context.

Buildings on corner gateway plots should be designed to address both frontages.

Developments on Gateway plots should avoid high security fencing or similar boundary treatments to the principal conditions 'A' and 'B' indicated in the diagram opposite. Boundary treatments along these frontages should be limited to hard/ soft landscaping.

Large areas of car parking or service yards should not be located in front of principal elevations ('A' and 'B') on Gateway plots.

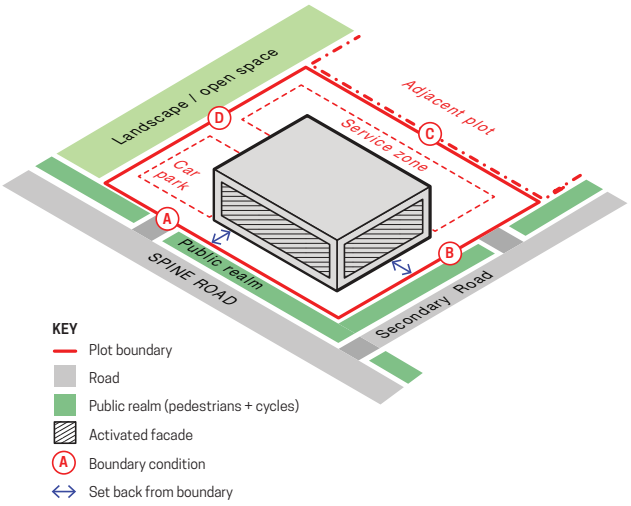


Figure 14. Buildings on gateway plots should comply with set back requirements and be aligned to activate street frontages.

Figure 15. The prominence of Gateway plots should be reflected in the design quality and outlook of developments.

C2. BOUNDARIES AND LANDSCAPE

The design of on-plot landscaping plays an important role in the perception and use of industrial sites, particularly where built forms are largely determined by functional requirements.

Perimeter boundary treatments will often define the public experience of a development, and as such, developers and designers have a duty to ensure the treatment of boundaries are fit for purpose but do not detract from the overall quality of the public realm.

C2.1 MATERIAL SPECIFICATION

Materials proposed for on-plot landscaping and boundary treatments should be of suitable type, quality and robustness. The selection of proposed materials should also take into account:

- The exposed/ coastal nature of the site.
- The volume and types of industrial vehicular traffic accessing the plot.
- Security requirements to plot boundaries and access points.
- Access and maintenance requirements to boundary and landscape treatments (including vehicular loading).

Example material specifications considered appropriate for on-plot boundary and landscape treatments are provided in Appendix D2.

Landscape treatments should be designed and specified by a suitably qualified landscape architect.

C2.2 BOUNDARY TYPES

Figure 17 describes five typical boundary types within industrial developments. Further building-specific guidance is provided in the 'Plot Typologies' section of this Design Guide.

Developments should generally avoid high security treatments in front of principal frontages (conditions 'A' and 'B' in Figure 17) where possible, and particularly on Gateway plots.

Perimeter block arrangements (section C1.6) will reduce the need for boundary treatments to plot frontages.

Figure 16. The use of landscaping as a 'buffer' along a plot frontage.

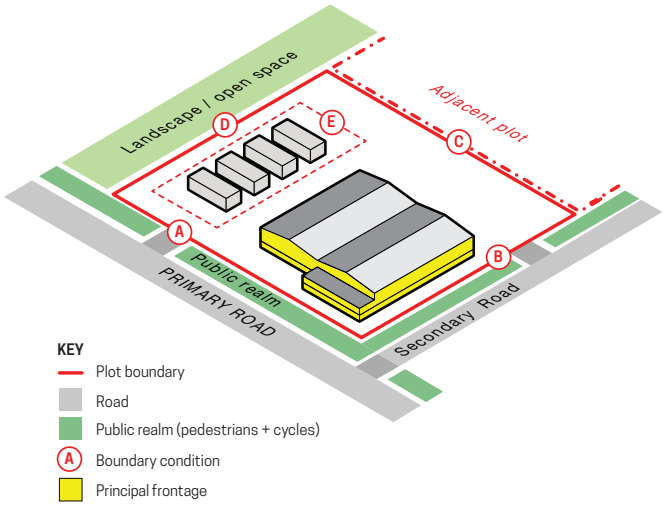


Figure 17. The range of boundary types that might apply to a typical development plot.

Figure 18. Boundary planting can be used to focus attention on building forms.

However, there will be sites abutting public areas that cannot be enclosed by buildings. Where secure boundary treatments to boundary types 'A' and 'B' are unavoidable, alternative measures should be taken to mitigate the visual impact.

Boundary treatments between plots (type 'C' in Figure 17) and within plots (type 'E' in Figure 17) should be determined by functional and security requirements.

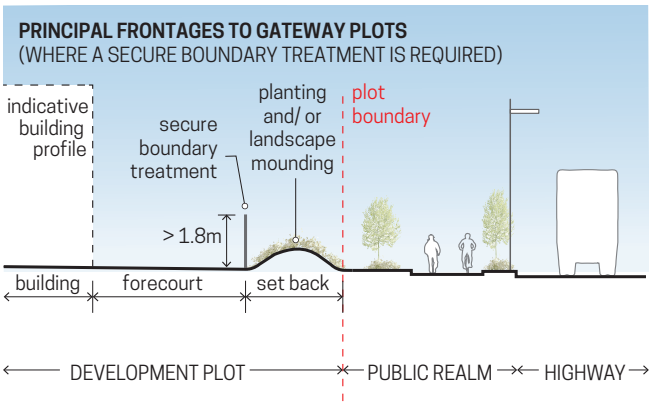
Requirements for boundary treatments between plots and designated open space or biodiversity sites (type 'D' Figure 17) will depend on the location in the masterplan. Design measures may be required to mitigate their visual impact.

C2.3 PERIMETER LANDSCAPING TO GATEWAY PLOTS

In the case of key gateway plots and other high profile sites, where perimeter fencing is not required, hard or soft landscaping can form both an appropriate psychological distinction between public/ private space.

Where perimeter fencing is a security requirement, a set back from the footpath allows a soft-landscaped buffer to be created. Figure 19 demonstrates the minimum set back requirements for principal frontages (boundary types 'A' and 'B'). There are no specific requirements for other boundary types, but access for maintenance should be considered.

Buffers may be mounded or planted to reduce the visual impact of fencing on the public realm. The use of mounding or planting along plot boundaries should not impede natural surveillance from the footpath and should not compromise the effective height of secure boundary treatments.



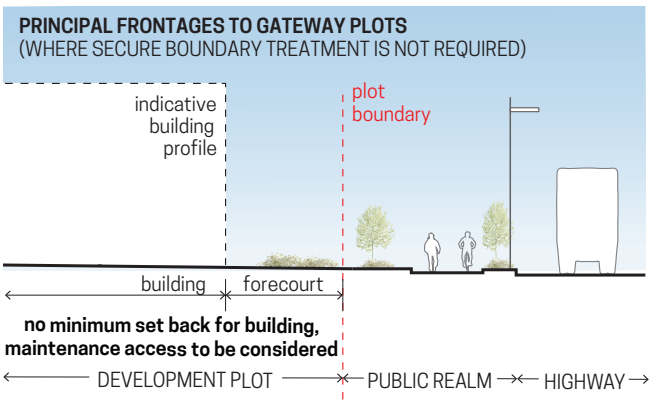


Figure 19. The visual impact of perimeter security fencing to Gateway Plots should be minimised through the use of minimum setbacks and landscaping/planting. Where perimeter security fencing is not a requirement, landscaped forecourts can also be used to create a distinction between public realm and private development.

C2.4 LANDSCAPED FORECOURTS

Areas immediately outside building entrances and key frontages are opportunities to create pedestrianised forecourts.

Landscape treatments to forecourts can help to anchor buildings within their immediate context, create an attractive approach for visitors, and provide areas of outdoor amenity space for staff.

Successfully designed forecourts will typically consist of a combination of high-quality hard and soft landscaping, alongside lighting and seating. These spaces may also be appropriate locations for public art or freestanding signage.

The design of forecourts also requires consideration of security and access for maintenance and emergency vehicles.

Figure 20. Soft landscaping used to book-end and break up forecourt car parking.

C2.5 CAR PARKING

Where appropriate, the soft landscaping and tree planting can be used to effectively break up large amounts of surface car parking, particularly on Gateway Plots. This can be achieved by replacing some spaces with soft landscape, creating a landscaped buffer between rows, or book-ending rows.

Areas of soft landscaping within car parks should be designed to discourage vehicles to park on these areas through the use of adequate kerbs, bollards or larger shrub planting.

Soft landscaping can also be used to segregate pedestrian routes within larger areas of car parking.

C2.6 AMENITY AND BIODIVERSITY SPACES

All workplaces or other occupied facilities (e.g. training facilities) should provide an appropriate level of outdoor amenity space for staff and other building users. Amenity space can take a variety of forms including:

- Private courtyards, balconies or terraces.
- Landscaped greenspace.
- Landscaped forecourts (see C2.4).
- Natural grassland, wetland, or woodland.

Figure 21. Outdoor amenity spaces can be designed to fulfill for biodiversity and water management requirements.

Outdoor amenity spaces can provide a range of health and well-being benefits for the workforce, such as enabling staff to take breaks and walks outside. These spaces also provide visual amenity from occupied internal spaces.

If designed appropriately, amenity spaces can provide biodiversity and ecological enhancements for a development.

With careful planning, design, and management, industrial facilities can also provide landscape amenity space for public visitors to access a specified area of a development.

Figure 22. Outdoor amenity spaces can be designed to fulfill biodiversity and water management requirements.

C2.7 SURFACE WATER MANAGEMENT

Where development results in a net loss of green space, consideration should be given to the incorporation of surface water management and attenuation systems (e.g. Sustainable Urban Drainage or SUDs).

A SUDs approach to drainage design combines a sequence of appropriate water drainage structures to manage water runoff in order to minimise impact on the environment. These include:

- Source control, e.g. soakaways, permeable paving, rainwater harvesting, green roofs or other surface infiltration, attenuation and conveyance techniques that deal with runoff at the source.
- Site / local control, e.g. swales, ponds, infiltration basins or detention basins.
- Wider controls, e.g. balancing ponds or wetlands.

The incorporation of SUD systems within development plots can provide additional ecological and biodiversity benefits. Swales or ponds can also be integrated into outdoor amenity spaces.

Specific on-plot requirements for surface water management and attenuation will be defined in the suite of Teesworks strategy documents.

Figure 23. Sustainable Urban Drainage Systems to be considered where appropriate.

C3. BUILDING FORM AND MATERIALS

The design of new industrial buildings and infrastructure is an opportunity to provide an attractive setting for businesses and enhance the environment for staff and visitors.

Building forms and materials must be of suitable type and quality to meet performance requirements, but should also be designed to consider the character and context of the site.

C3.1 BUILDING FORM

The overall height and volume of new buildings is not covered by this guidance as it will be determined by functional requirements and planning policy. The aim of the guidance in this section is to enhance the visual appearance of new buildings through the design and expression of forms, particularly on Gateway Plots.

New industrial buildings should be designed in a way that considers the overall composition of built forms, with particular attention paid to occupied spaces and human-scale elements.

Expression of form and massing can be achieved through a range of architectural design measures such as:

- Variation in massing e.g. expressing elements as projections or recesses.
- Treatment of separate volumes or functions in contrasting materials or colours.
- Expression of roof or corner profiles.
- Expression of projecting or recessed elements.
- Variations in texture or depth of cladding materials.
- Expression of feature elements (refer to C3.10)

Figure 24. An example of a building feature and feature material (timber brise soleil) used to express a building entrance.

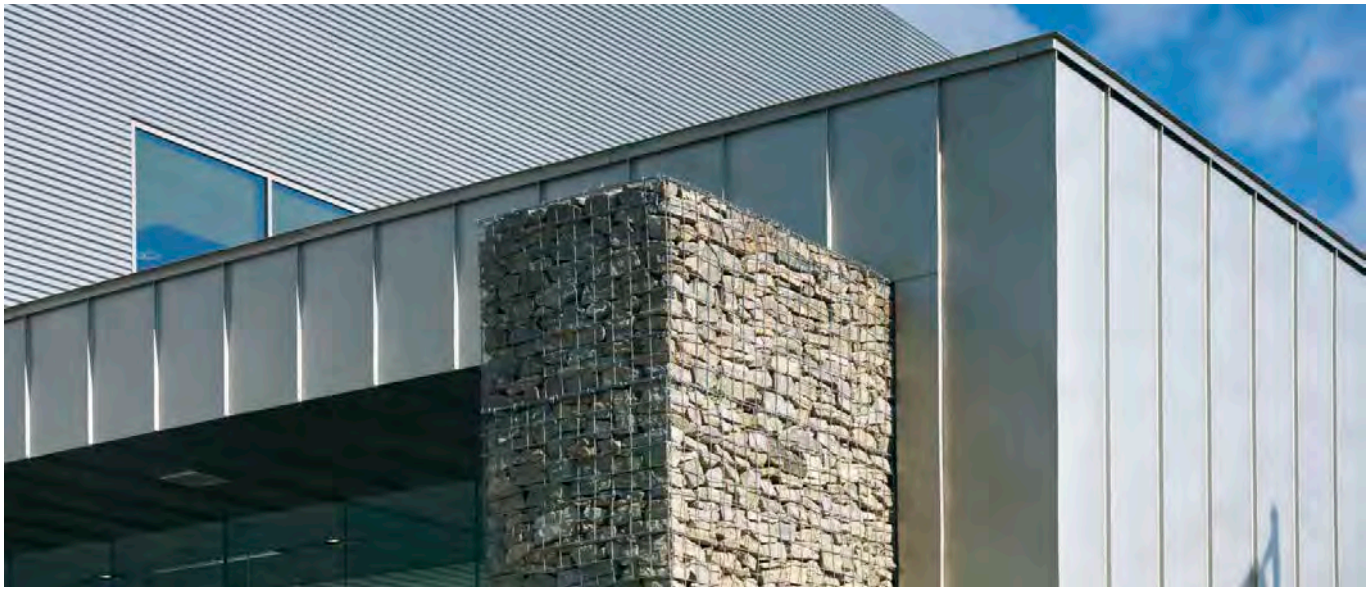


Figure 25. Feature materials can be used to signify important elements such as entrances.

C3.2 MATERIAL SPECIFICATION

This Design Guide for Development does not seek to impose a particular material specification or limit the palette of external materials for new buildings.

Building envelopes, cladding, and other external elements should be constructed from a material palette appropriate to the typology and use.

Proposed materials should be durable, high quality, and appropriate to the function of the building or structure in terms of cost effectiveness and buildability.

The selection of proposed envelope materials should take into account:

- The exposed/ coastal nature of the site.
- Maintenance requirements and replaceability, particularly where high-level access is required.
- The risk of vehicular damage, particularly to low-level materials.
- Material performance, including thermal, fire, and acoustic performance.

Emerging products and systems that integrate photovoltaic panels within building facades should also be considered as part of a development's renewable energy strategy.

Example material specifications considered appropriate for building envelopes are provided in Appendix D2.

Further guidance on coloured coatings to envelope materials (e.g. polyester powder-coated metal cladding) is covered in section C4.1.

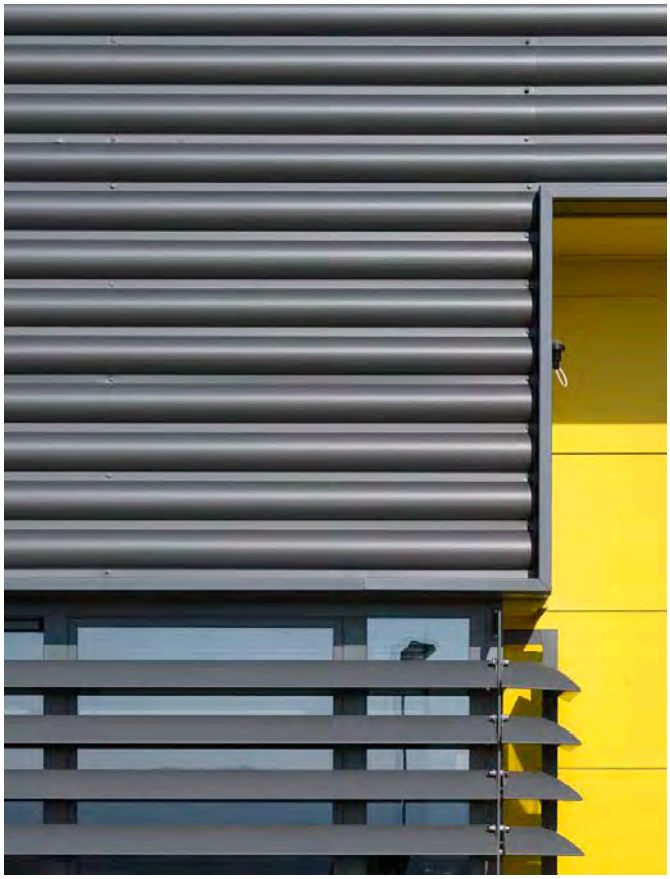


Figure 26. An example of a standard industrial cladding material (profiled metal) used alongside brise soleil and coloured reveals to create depth and visual interest.

C3.3 BUILDING PLINTHS

A contrasting plinth material can be used to break up the massing of large industrial buildings as well as visually 'anchoring' a building within its landscape setting.

Building plinths can play a role in protecting vulnerable cladding materials from damage at low level. Where used, plinth/ ground floor materials should be robust enough to resisting impacts from vehicles and pedestrians. Common materials for plinths include masonry, brick, or concrete.

C3.4 ROOF FORMS

Roof forms will be primarily driven by functional and structural requirements, but rooflines and roof profiles can also be used to create visual interest or express a particular function of a building. An example of this is the industrial 'sawtooth' profile providing daylight into deep-plan internal spaces.

Roof design should take into account the potential for roof-mounted photovoltaics as part of a development's renewable energy strategy. The locations of photovoltaics should be compatible with operational and maintenance requirements.

Consideration should be made to the use of green and brown roofs to contribute to sustainable drainage and biodiversity strategies. Green and brown roofs are particularly suited to occupied spaces (e.g. offices) where they contribute to building thermal performance. The locations of green and brown roofs should be compatible with operational and maintenance requirements.

C3.5 ROOFTOP PLANT

Exposed rooftop plant should be screened on certain building types (refer to typologies guidance) and in sensitive locations. This includes the principal elevations of gateway plots (refer to C1.7).

C3.6 GLAZING

Where appropriate, the location of glazing and windows should respond to plot specifics such as site location, function, and views. Glazed facades should be used to animate building elevations which face onto landscaped forecourts, amenity spaces, or key routes.

Figure 27. The 'sawtooth' profile expresses the function of providing north light within the deep-plan manufacturing space. The south facing sloping sections can be used for roof-mounted photovoltaics.

Figure 28. Exaggerated roof profile used to express a glazed circulation core.

Highly glazed facades are associated with heat loss and/or overheating risk. This is particularly the case if south or west facing. Careful analysis of building orientation, thermal performance, and solar shading must be considered as part of the design process.

Highly reflective 'mirrored type' glazing should be avoided.

C3.7 BUILDING ENTRANCES

Primary entrances for staff and visitors should be easily identifiable and expressed through the architectural form of the building.

Primary entrances should be covered by canopies, recesses or roof overhangs.

Both primary and service entrances can be identified through the use of contrasting colours, materials, graphics, and lighting (refer to section C4.2).

Figure 29. A building entrance expressed through roof profile, over-sailing roof canopy and large area of glazing with brise soleil.

C3.8 BUILDING FEATURES

For the purposes on the design guide, building features are architectural elements that do not form part of the primary envelope (roof or walls). This includes (but is not limited to):

- entrances and entrance canopies,
- recesses and openings,
- soffits and reveals,
- projecting bays,
- door and window reveals,
- external stairs, ramps, and bridges,
- freestanding elements e.g. totem signage.

C3.9 BEACONS

Many industrial building typologies include taller structures that may be visible from long distances beyond the plot boundary. These elements have the potential to become landmark 'beacons' through the application of colour or lighting.

Figure 30. The use of green roofs on industrial buildings can provide a range of benefits including biodiversity contribution and reduced water run-off rates.

C4. COLOUR, LIGHTING AND SIGNAGE

The use of feature colour, lighting, and graphics has a significant influence on the way in which the built environment is perceived and experienced. This includes the use of colour as part of a commercial brand or identity. Identity and colour can be applied at different scales and in different mediums. This guidance focuses on use of colour to communicate identity, aid orientation, and draw attention to key features.

C4.1 COLOUR PALETTE

This design guide recognises the value of colour as part of commercial or brand identity and does not seek to impose the use of a pre-determined colour palette for new buildings and developments.

In general it is preferable that primary envelope materials are treated in 'background' colours (i.e. neutral, grey, or black), with distinctive colours reserved for building features (C3.8), beacons (C3.9), or signage.

Exceptions to this will be considered where there is particular architectural merit in the use of feature colour(s) across a primary envelope material.

Not all buildings or features will need to be highlighted using feature colours. Texture, use of glazing, and depth in massing and elevation can be equally (or more) effective than use of colour.

The absence of a bold colour palette on buildings can emphasise the natural, green landscape around built forms.

Figure 31. Colour tends to be most effective when used on selected features such as soffits, reveals, or projecting elements.

C4.2 LIGHTING

On-plot functional lighting will be required to meet operational, health and safety, and security requirements.

In addition to functional lighting, feature lighting can be used as an alternative approach to highlighting building features or primary frontages. Feature lighting can also be used to introduce colour to facades and building elements.

Figure 32. Colour can be used to create an architectural feature of a functional element.

Feature lighting can also be used to further accentuate the visibility of 'beacons' (refer to C3.9).

Both functional and feature lighting should be designed to minimise the impact of light pollution on adjacent habitat areas.

C4.3 SIGNAGE

Building-mounted signage should be considered as part of the elevation design and be appropriate to the scale and building type.

Signage provided on totems or other freestanding structures should be considered as part of the on-plot landscape design.

Signage should be of an appropriate type and scale in order to be legible for all users. The design should be consistent throughout the development plot.

C4.4 LARGE-SCALE GRAPHICS

In addition to commercial signage, the large facades of industrial buildings are well-suited to the use of large-scale 'super' graphics.

Super graphics can be used to reinforce a brand identity or for functional purposes such as the identification of numbered bays or building entrances.

Figure 33. External lighting can be incorporated into building facades and landscape design to increase night-time visibility and reinforce brand identity.

Figure 34. Large-scale 'super-graphics' used to animate a warehouse facade.

C5. LARGE-SCALE INDUSTRIAL OPERATIONS

Large-scale industrial operations covers a wide range of developments. These have been grouped together as a single typology as they share similar plot characteristics.

In design terms these developments will primarily be driven by the functional requirements of the industrial processes. There is also a growing awareness that these facilities can act as strong visual beacons to engage people with the industries that operate within these plots.

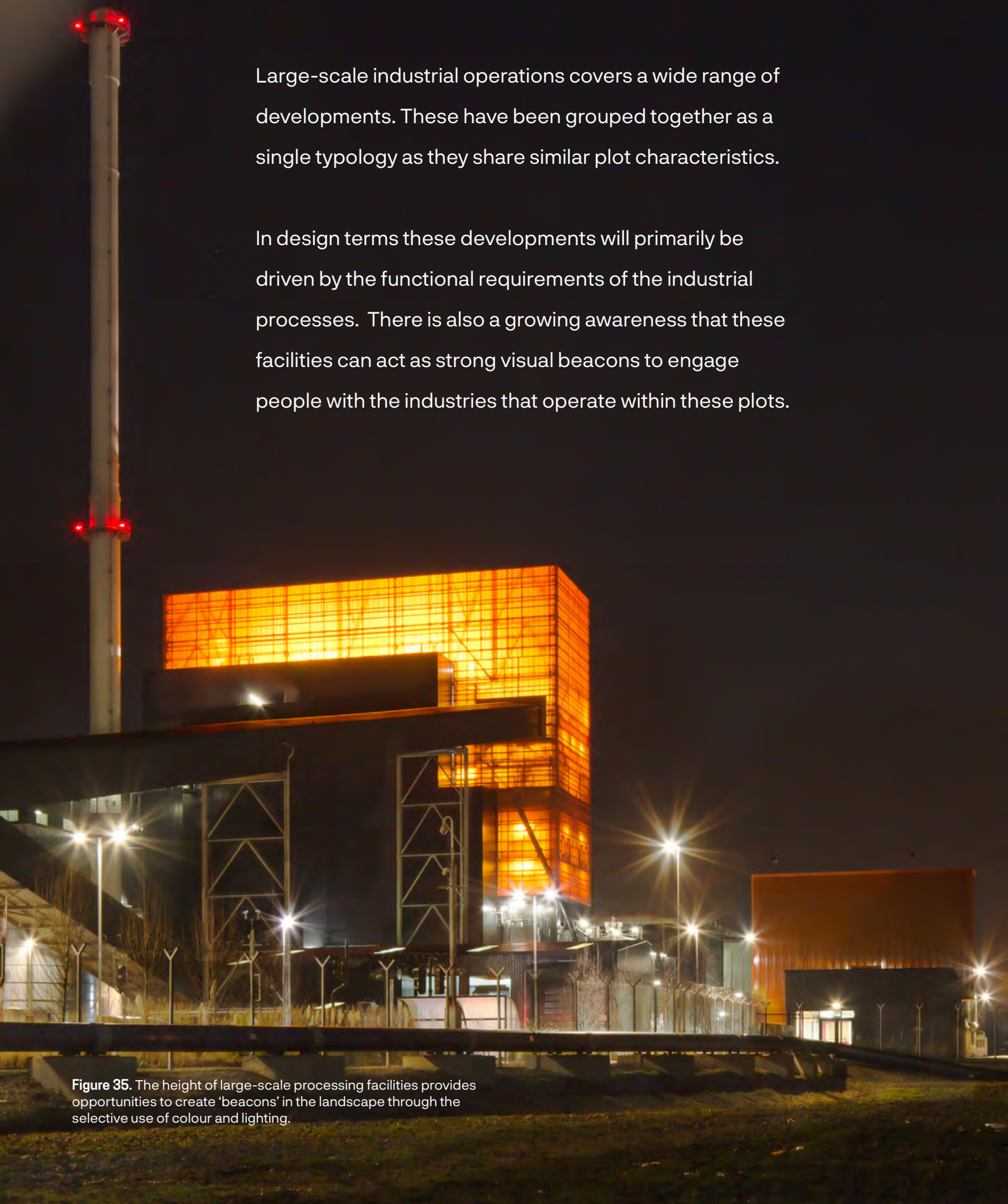
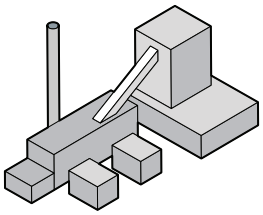


Figure 35. The height of large-scale processing facilities provides opportunities to create 'beacons' in the landscape through the selective use of colour and lighting.



The large-scale industrial operations plot typology includes:

- Steelmaking
- Metals recycling
- Bulk materials processing
- Major energy generation
- Heavy/ materials manufacturing

Large-scale industrial operations may incorporate a range of ancillary building uses and accommodation including control rooms, research labs, office space, warehousing and open storage. For complex operations it will therefore be necessary to refer to other plot typologies within this design guide.

C5.1 ACCESS AND ARRANGEMENT

Large-scale industrial operations will typically be set within substantial open plots, with major buildings and infrastructure set deeper within the plot to accommodate requirements for utilities, stand-off distances, access roads and servicing zones.
Plot access points and on-plot roads should be designed to ensure safe access and movement for all users and vehicle types (including movement of bulks) in accordance with section C1.

Where the plot includes occupied buildings (e.g. ancillary offices or control rooms) access to and arrangement of these buildings will require additional consideration to separate users from service zones and service routes. This includes separate entrances and safe routes for pedestrians, cyclists, and cars.

Figure 36. Large-scale processing facilities can be expressed architecturally and also provide building frontage.

Orientation and arrangement within the plot will likely to be driven by functional requirements and spatial constraints.

At feasibility and concept stages, options for the orientation building and infrastructure should be tested in response to key axes relating to the principal site boundaries and topographical features.

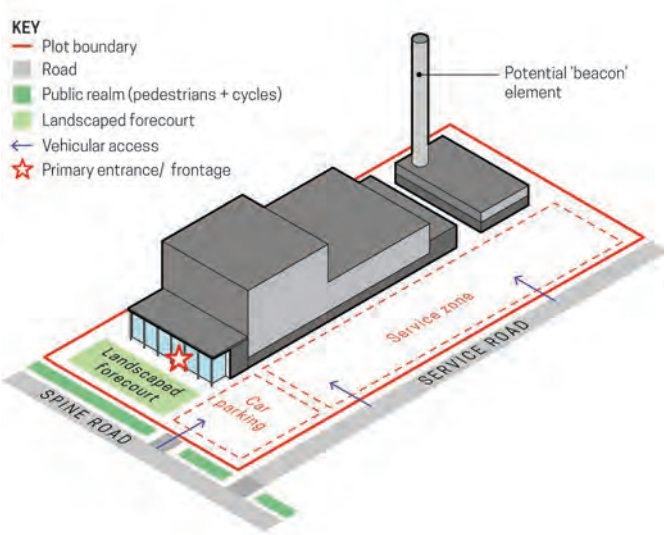


Figure 37. An example plot arrangement for a large-scale industrial facility incorporating a building frontage onto a spine road.

Figure 38. Subtle features (such as curved corners) can soften the impact of a singular cladding material applied to a large industrial volume.

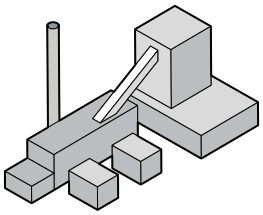
C5.2 BOUNDARIES AND LANDSCAPE

Boundary treatments to large-scale industrial operations will generally be driven primarily by functional and security requirements.

Where developments (including ancillary buildings) front onto primary routes or are located on Gateway plots, the guidance in section C2 should be followed to reduce the visual impact of fencing on the public realm.

Where required, large-scale industrial operations may provide scope to incorporate larger areas of biodiversity or water management systems.

Figure 39. The over-cladding of large-scale industrial bulks can be used to create iconic building forms within the landscape.



C5.3 BUILDING FORM AND MATERIALS

Large-scale industrial operations vary significantly in their scale and massing, which will be driven predominantly by functional requirements. Material specification will also be driven by the function of the building(s) and infrastructure.

The height and volume of large-scale industrial structures have the potential to act as iconic 'beacons' and can create a visual counterpoint to other building types in the masterplan.

A key decision in the early-stage design of large-scale industrial facilities is whether to enclose bulk processing equipment. Designers and developers should consider the enclosure of bulk processing equipment if the development meets all of the following criteria:

- The development is clearly visible from the public realm or environmentally sensitive coastal areas (South Gare and Coatham Sands SSSI).
- Enclosures would not impact on the overall functionality of the development or facility.
- Enclosing bulks is economically and structurally feasible.

Where bulk functions are enclosed by cladding, careful selection of form and materials can help to express the internal processes.

Use of transparent or translucent materials should be considered to reveal internal processes where appropriate.

A limited and consistent palette of materials should be applied to all ancillary buildings and functions in order to unify them as a group. Other occupied buildings should follow the general form and massing guidance in section C3.

Figure 40. External processing plant can take a variety of forms that express the function of the industrial activity and provide visual interest.

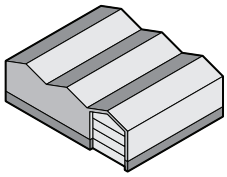
C5.4 COLOUR, LIGHTING AND SIGNAGE

Key elements of the structures may be highlighted through the use of contrasting materials, colours and lighting. These should be limited in their application in order to stand out against their context.

Figure 41. External lighting design can be used to transform large-scale industrial facilities into visual beacons.

C6. MANUFACTURING AND LOGISTICS

Figure 42. The expression of key architectural elements and selected use of colour can help to add visual interest to the large volumes required for manufacturing facilities.



Manufacturing facilities are characterised by the scale of their footprint, which typically includes large-span manufacturing buildings alongside storage, service, and distribution space. Manufacturing facilities are also workplaces for significant numbers of staff and other users, and this form of development therefore requires careful consideration of access, flows, and amenity space in order to deliver successful 'front of house' and 'back of house' facilities.

The Manufacturing and Logistics plot typology includes:

- Automotive manufacturing
- Component and equipment manufacturing
- Other medium and small scale manufacturing
- Logistics and distribution centres.

Manufacturing and Logistics operations often incorporate a range of ancillary uses and accommodation including research labs, office space, warehousing and open storage.

For complex operations it will be necessary to refer to other plot typologies within this design guide.

C6.1 ACCESS AND ARRANGEMENT

Manufacturing and Logistics facilities typically comprise of large-scale 'big box' spaces alongside staffed accommodation including offices, research labs, and amenity space.

The range of functions generates a demanding set of plot access requirements - access for a range of staff and visitors must be managed alongside the movement and storage of materials and components.

Plot access points and on-plot roads should be designed to ensure safe access and movement for all users and vehicle types (including movement of bulks). Access for staff and visitors should be segregated from service and loading zones in accordance with the guidance in section C1, and the layout of pedestrian access routes through and around service zones should be carefully considered.

Figure 43. Architectural expression of a pedestrian entrance at a different scale to the main building mass.

Primary building entrances and accommodation for staff and visitors should be orientated towards the front of the plot with direct frontage onto highways, public realm, or landscaped forecourts.

Areas of staff and visitor car parking should be located to the side or rear of primary frontages. This is to avoid car parking dominating forecourt areas, which should be reserved for landscaping.

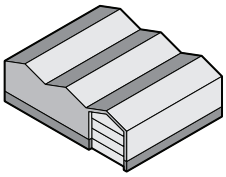
An alternative approach to resolving cross-over of flows is to divide different functional areas by level, for example by locating staff and office spaces on upper levels with service and distribution areas at lower ground floor.

Dividing functions by level may require circulation routes to resolved through the introduction of external pedestrian bridges, steps, ramps. These can all be expressed as building features (refer also to section C3.8).

Where pedestrian and vehicular cross-over of flows cannot be avoided, particular care must be taken to ensure the safe movement of all building users and visitors.

Figure 44. An example plot arrangement for an Manufacturing and Logistics development with building frontage onto a spine road.

Figure 45. 'Front of house' offices expressed as separate mass to the main works, with curved glazed facade.



C6.2 BOUNDARIES AND LANDSCAPE

Manufacturing and Logistics developments will vary in their security requirements. For many developments there will be opportunities for direct plot frontage without significant set backs or secure boundary treatments.

Where plots front onto primary routes or public realm, the guidance in section C2 should be followed.

Boundary treatments to service and distribution areas will be driven primarily by functional and security requirements, and the general guidance in section C2 should be followed.

Figure 46. Office accommodation within manufacturing facilities can provide opportunities for frontage directly onto public realm and/or spine roads

C6.3 BUILDING FORM AND MATERIALS

The different spatial and functional requirements of Manufacturing and Logistics facilities spaces can be expressed through contrasting forms and material treatments.

Manufacturing and warehouse buildings are typically large-span volumes with relatively blank facades (i.e. limited requirements for glazing or views out).Treatment of larger volumes should be considered in order to add visual interest and express the function of the building in accordance with the general guidance in section C3.1.

Staff and visitor entrances should be easily identifiable and designed at a human scale. Entrances can be defined through the use of recesses, canopies, projections, or other architectural features.

Key building amenity spaces (e.g. staff canteens or social hubs) can be expressed, where appropriate, through the use of projections, colour, contrasting forms, or other architectural features.

Office and other occupied ancillary spaces are likely to require a higher proportion of glazing. This provides opportunities for responding to key views or activate facades overlooking primary routes and public realm.

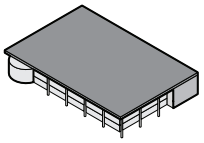
Figure 47. Architectural expression of a building entrance and frontage.

C6.4 COLOUR, LIGHTING AND SIGNAGE

There are no typology-specific recommendations for Manufacturing and Logistics developments - refer to the general guidance in section C4.

C7. RESEARCH AND INNOVATION

Figure 48. Reseach and innovation buildings offer the potential for development and frontage up to the plot boundary.



Dedicated research and innovation uses are likely to form a relatively small proportion of the development area within the overall South Tees masterplan. However, as workplaces and educational facilities for large numbers of staff and other users, research and innovation facilities generate a complex set of design considerations.

The research and innovation plot typology includes:

- Research and development laboratories
- Industrial and technology training facilities
- Office / business space

C7.1 ACCESS AND ARRANGEMENT

Research and innovation developments will typically have fewer servicing requirements than other plot typologies covered in this design guide. This opens up greater scope for buildings to front directly onto highway and public realm.

All research and innovation developments should be designed so that some of the building(s) provide frontage onto highway and public realm.

Frontages can be set back behind landscaped forecourts.

Vehicular access points and areas of car parking should be located to the side of key frontages or the side/ rear of plots in line with the guidance in section C1. This is to avoid car parking dominating the key building frontage.

Figure 49. Architectural expression of a building entrance and frontage.

C7.2 BOUNDARIES AND LANDSCAPE

Research and innovation developments are likely to have less demanding perimeter security requirements than other industrial typologies.

Psychological and controlled boundaries such as water features, drainage channels and swails, planting, or mounding should be incorporated to restrict casual intrusion onto the plot and direct visitors towards formal pedestrian routes and entrance points.

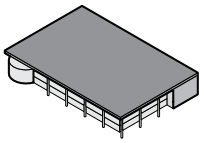
Research and innovation buildings should provide access to outdoor amenity space for staff and visitors. This can be provided in a number of different ways depending on the development type and plot constraints:

- Landscaped 'buffers' spines between plots.
- Landscaped forecourts.
- Private courtyards, balconies or terraces
- Green 'heartspace' amenity areas shared between a number of development plots (the 'campus' model).

Landscaped amenity areas should be usable throughout the year, designed with high-quality materials and planting, and follow the general guidance in section C2.

Figure 50. Landscaping and water can be used as a subtle boundary treatment and amenity space between plots.

Figure 51. A fully glazed facade of office accommodation with over-sailing roof and brise soleil.



C7.3 BUILDING FORM AND MATERIALS

Early consideration of building form and materials is important in the design of research and innovation developments. This plot typology is likely to be particularly visible within the masterplan, and will provide workplaces and training facilities for large numbers of staff and visitors.

Staff and visitor entrances should be easily identifiable and designed at a human scale. Entrances can be defined through the use of recesses, canopies, projections, or other architectural features.

Key functions of the building such as amenity spaces may also be highlighted, where appropriate, through the use of projections, colour, contrasting forms, or other architectural features.

Careful consideration should be given to the massing and roof profiles of research and innovation buildings. Simple but well-detailed building forms and roof profiles (e.g. flat roofs) can help to create a uniform design approach and are generally preferable from a thermal performance point of view.

Over-sailing roofs can function as canopies and solar shading where required.

Innovation and enterprise buildings will typically feature a higher proportion of glazing to office areas and other occupied spaces. Largely glazed facades are associated with heat loss and/or overheating risk, therefore careful analysis of building orientation, thermal performance, and solar shading should be considered.

C7.4 COLOUR, LIGHTING AND SIGNAGE

There are no typology-specific recommendations for research and innovation buildings - refer to the general guidance in section C4.

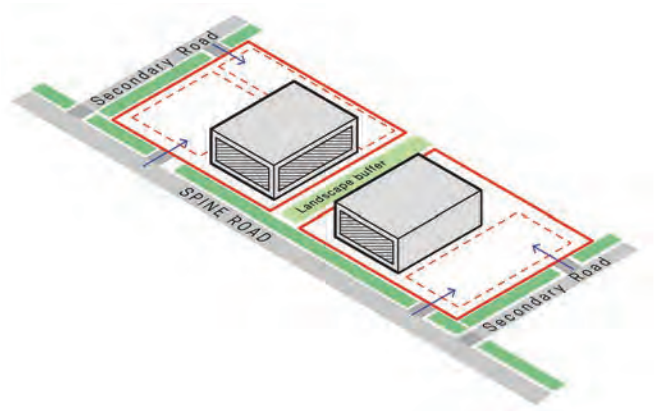


Figure 52. An example plot arrangement for a research and innovation developments with access onto a landscape buffer.

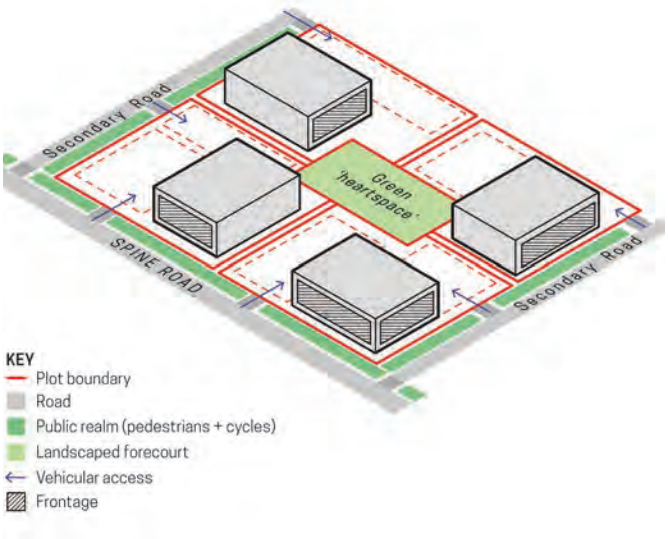
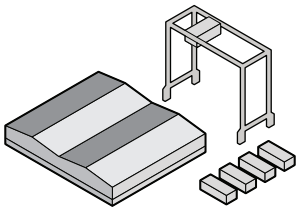


Figure 53. An example plot arrangement for a 'campus' cluster of research and innovation developments with access to green heartspace.

C8. PORT OPERATIONS

Figure 54. Offshore wind assembly at the Port of Esbjerg , Denmark.



Port-related industries typically operate on extensive plots with large areas dedicated to open storage and vehicular movement.

Future expansion, flexibility and sustainability are key considerations for port operations and infrastructure to ensure that industries are able to respond to changing demands and technological innovation.

The port operations plot typology includes:

- Container terminals and associated infrastructure
- Cargo berths and associated infrastructure
- Offshore energy manufacturing facilities

Port operations may incorporate a range of ancillary uses and accommodation including control rooms, and office space.

Port-related development plots at South Tees also benefit from the availability of existing rail infrastructure.

C8.1 ACCESS AND ARRANGEMENT

Port operations will typically be set within substantial open plots, with large areas of open storage, warehousing, significant vehicular infrastructure and a range of ancillary accommodation.

Access and movement strategies for port-related industries and offshore energy manufacturing facilities are driven by specific functional requirements and should be developed by specialist engineering disciplines.

Plot access points and on-plot roads should be designed to ensure safe access and movement for all users and vehicle types (including movement of bulks and HGVs) in accordance with section C1.

Ancillary accommodation including gatehouses, control rooms, and offices should follow the guidance set out in section C1.

Open storage compounds should be screened from the public realm with buildings or landscape treatments.

Visualisations from key viewpoints (including long-distance views from the public realm) should be produced at the design stage to support the development of screening strategies.

C8.2 BOUNDARIES AND LANDSCAPE

Boundary treatments will generally be driven primarily by functional and security requirements.

Where developments (including ancillary buildings) front onto primary routes or are located on Gateway plots, the guidance in section C2 should be followed to reduce the visual impact of security fencing on the public realm.

Landscape and planted screening for open storage compounds and security fencing should be designed by a suitably qualified landscape architect.

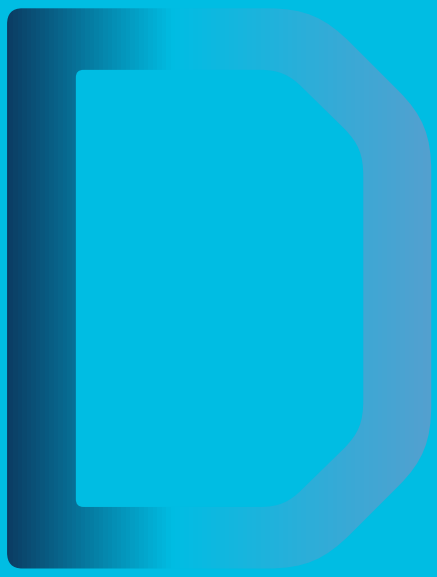
C8.3 BUILDING FORM AND MATERIALS

The treatment of warehouses and other buildings visible from the public realm should be considered in accordance with the guidance in section C3. This guidance should be applied to all permanently staffed ancillary buildings such as offices.

C8.4 COLOUR, LIGHTING AND SIGNAGE

Large port-related infrastructure (e.g. cranes and gantries) act as iconic ‘beacons’. This can be emphasised through the use of colour and/or feature lighting.

TECHNICAL APPENDICES



The Design Guide for Development provides an overview of the importance of good design in creating a world class destination for business at Teesworks with specific guidance for the type of developments that are expected to be attracted. The Technical Appendices provide additional information that helps inform the application of the guidance by design teams.

The following appendices have been provided and can be read in conjunction with the Design Guide for Development:

D1 The Planning, Design Review and Decision Making Process
D2 Example Materials and Specifications

D1 THE PLANNING, DESIGN REVIEW AND DECISION MAKING PROCESS

D1 THE PLANNING, DESIGN REVIEW AND DECISION MAKING PROCESS

D1.1 USING THE DESIGN GUIDE FOR PLANNING APPLICATIONS

D1.1.1 Redcar & Cleveland Borough Council (RCBC) is the local planning authority for development proposals at Teesworks. Teesworks has worked in partnership with RCBC in preparing this non-statutory Design Guide to help inform development proposals.

D1.1.2 Where a planning application is required, Teesworks will provide guidance to applicants (including prospective occupiers and their design teams) including, where appropriate, reference to this Design Guide for Development and any future versions which may be prepared by Teesworks from time to time..

D1.2 SCOPE OF THE DESIGN GUIDE

D1.2.1 The Design Guide contains design principles and parameters that will suit many forms of development at Teesworks, though it is accepted that some industrial operations and developments will fall outside the realms of this guide. Where appropriate, the application of this design guide will help deliver the Objectives and Core Principles of the South Tees Regeneration Master Plan and ensure the creation of an exemplar, world-class industry and enterprise park.

D1.2.2 The use of this Guide will help individual development proposals make their own contribution to this collective outcome.

D1.2.4 In accordance with Policy LS4 of the Local Plan, RCBC is committed to supporting the regeneration of the Teesworks area through implementing the South Tees Area Supplementary Planning Document (SPD). The Strategic and Site-Specific Development Principles set out in the SPD will guide the comprehensive delivery a world class offer, in terms of a business location of identifiable character, quality of place and unique commercial attributes.

D1.2.5 This Design Guide supplements and expands the Development Principles of the SPD.

D1.3 USE OF THE DESIGN GUIDES IN THE PLANNING APPLICATION PROCESS

D1.3.1 The purpose of the Guide is to support developers and their design teams, by reducing the extent of design analysis at the concept stage, and setting out the objectives and key features that Teesworks and RCBC may consider during the application determination process. The Guide sets out a protocol for developers in progressing and seeking feedback on design proposals although applicability will be at the discretion of Teesworks.

D1.3.2 The Design Guide can be applied equally to both outline and detailed planning applications.

D1.3.3 Outline planning applications may be appropriate when development schemes are in an early stage of formulation, for example where the final occupiers of buildings is not known or where the technical specification of buildings and associated infrastructure is still to be finalised. Once the final designs and specifications of the buildings, associated infrastructure and layouts of individual sites are known, then the Design Guide will be used again at the reserved matters stage when details of appearance, layout, scale and landscaping are submitted to RCBC for approval.

D1.4 TEESWORKS AND RCBC'S RESPECTIVE ROLES

THE ROLE OF TEESWORKS

D1.4.1 Teesworks wish to ensure that the wider site infrastructure, as well as the development and place-making qualities as set out in the Master Plan are achieved through the use of this Design Guide and associated Teesworks Strategy documents.

D1.4.2 Teesworks will ensure that the principles and parameters of the Design Guide are appropriately applied when schemes are being worked up in preparation for planning application submissions. As the place-making standards resulting from the Design Guides are intended to help deliver Teesworks' Regeneration Master Plan, it will be Teesworks that works with developers to:

- incorporate the Design Guide into their schemes;
- enable them to deliver those standards in the construction of the development; and
- ensure that the standards are then maintained throughout the lifetime of the development.

D1.4.3 Teesworks will work with developers to ensure that the design standards are viable and achievable and do not compromise the overall success of any project. Through entering into Developer Agreements with developers, Teesworks will ensure that the standards are achieved without compromising the viability of the scheme. By working with developers to understand viability and delivery requirements, Teesworks will also be able to advise developers and RCBC on the appropriateness and application of panning conditions and agreements.

THE ROLE OF RCBC:

D1.4.1 RCBC will determine planning applications against the policies of the Local Plan and the South Tees Area SPD.

D1.5 THE DESIGN REVIEW PROCESS

D1.5.1 There will be three stages to the design review process in respect of proposals within Teesworks:

1. Concept design discussions;
2. Pre-application review;
3. Post-submission assessment.

Concept design discussions
D1.5.2 Firstly, with the Teesworks team – to discuss key principles and requirements, reflecting the position of the project within the wider site, its proximity to public realm, gateways and other buildings and spaces; and the primary considerations within the Design Guide.

Pre-application discussions
D1.5.3 To discuss detailed design proposals – following feedback from Teesworks at the concept stage. The recommendation is that this takes the form of a Design Worksop jointly with Teesworks and RCBC – to discuss, consider and provide feedback on the emerging proposals.

Pre/Post submission review and sign off
D1.5.4 Prior to the submission of a planning application, the final plans (and supporting planning documentation) to be signed off and approved by Teesworks.

D1.5.5 During the application period, RCBC will consult Teesworks on the planning application.

D1.5.6 Post submission – any proposed design changes during the application process or following the grant of planning permission, should be discussed and approved by Teesworks, in advance of discussions with RCBC.

D1.6 DEVELOPMENT CONSENT ORDERS

D1.6.1 Certain large-scale development proposals will be classified as a Nationally Significant Infrastructure Project (NSIP) and be determined by the Secretary of State, rather than RCBC, through the Development Consent Order procedure. With any such proposals, Teesworks will agree with the developer a project-specific approach to applying this Design Guide and reviewing the draft scheme proposals ahead of their submission to the Planning Inspectorate.

D1.7 TIMELINE

D1.7.1 The following is an expected typical time line for the design review process outlined above.

Week 1 Pre-application engagement commences; developer submits pre-application proposals to Teesworks.

Week 2

Week 3 Teesworks considers pre-application proposals.

Week 4 Developer receives response from Teesworks.

Week 5 Planning Application submitted.

Week 6 RCBC commence post-submission statutory consultation exercise.

Week 7

Week 8 Teesworks formally responds to RCBC's statutory consultation exercise.

Week 9

Week 10

Week 11

Week 12

Week 13 RCBC determine applications classified as minor.

Week 14

Week 15

Week 16

Week 17

Week 18 RCBC determine applications classified as major.

Week 19

Week 20

Week 21 RCBC determine applications that are accompanied by Environment Statements in accordance with the Environmental Impact Assessment regulations.

Week 22

Week 23

Week 24

Week 25

D2 EXAMPLE MATERIALS AND SPECIFICATIONS

D2.1 INTRODUCTION

This appendix provides example material types and specifications for external envelope and landscape treatments.

Proposed materials should be practical, durable, affordable and attractive. Choosing the right materials can greatly help a new development to fit harmoniously with its surroundings.

All proposed materials will be subject to, among others, the following statutory approvals, regulations and technical guidance:

- Local Authority Planning approval, including Planning Conditions and S106 Requirements
- Building Regulations (England and Wales)
- Relevant British and European Standards and Codes of Practice
- Specific requirements of the Utility Suppliers, Local Authorities and Local Planning Authorities
- The Local Fire Officer's requirements
- Construction (Design and Management) Regulations (CDM)
- Product manufacturers' installation/ assembly requirements and technical information generally.

D2.2 SUSTAINABILITY

Sustainability building design is a wide-ranging and complex subject that must be considered from the very earliest stages of a project.

The main objectives of sustainable design are to reduce, or avoid, depletion of critical resources like energy, water, land, and raw materials; prevent environmental degradation caused by facilities and infrastructure throughout their life cycle; and create built environments that are livable, comfortable, safe, and productive.

Six fundamental principles should be considered carefully form the start of the project:

- optimise site potential,
- optimise energy use,
- protect and conserve water,
- optimise space and material use,
- enhance wellbeing and environmental quality,
- optimise operational and maintenance requirements.

For further details refer to the separate Teesworks sustainability guidance documents.

CURTAIN WALLING SYSTEM (WITH METAL PANEL INFILL)

- Glazing specification to support the requirements of the project to meet the thermal and solar control requirements, balanced against the quality and quantity of daylight penetration.
- The glazing should include translucent laminated interlayers or graduated enamelled frit where privacy is required whilst maximising daylight penetration. Consider inclusion of bespoke pattern manifestation to glazing where required to comply with the relevant Approved Documents.
- A unitised or stick curtain walling system can provide a slimline vertical floor to ceiling high modular and potentially seamless appearance with visible mullions to room side only and a flush facade appearance externally. Curtain walling systems can incorporate openable automated or manually operable vents to meet natural ventilation and smoke control requirements. Where required the system can also incorporate automated and manual doors.
- The system should maintain a seamless interface with durable aluminium polyester powder coated ventilated or non-ventilated insulated cladding panels coordinated to fit into the vertical module of the curtain walling system where they form an integral part of the building enclosure. Panels to be suitably strengthened where applied at low or accessible levels of the building facades.

STANDING SEAM METAL CLADDING

- Standing seam trays can be installed horizontally or vertically. This façade system offers the possibility to clad all types of walls: flat, curved or complex.
- Sheet side laps are typically closed using Mechanical Seaming Tool to roll form the 'Fixed Seam Overlap Radius', creating attachment to the halter but still allowing free movement under thermal expansion.
- Cladding systems are available to mimic the appearance of traditional standing seam with quicker and more cost-effective installation.
- An advantage of this façade system is that it can be used on both walls and roofs, thus allowing roof and wall to blend as one. A range of widths and lengths of trays are available.
- Powder coated aluminium sheet is typically the most cost effective standing seam metal cladding system, but metals such as zinc or copper may be preferable, particularly to feature elements.

PROFILED METAL CLADDING

- A cost-effective cladding solution for large industrial or commercial applications. A wide range of profiles available, including corrugated, trapezoidal, sinusoidal or half-round. Modern manufacturing techniques allow metals to be pre-aged, coated with preservatives, or painted a wide range of hues and texture. Sheets can be installed vertically, horizontally or diagonally, and are capable of being applied to curved facades and other complex shapes. Examples of typical systems are:

BUILT-UP SHEETING SYSTEMS

- Built-up sheeting is assembled on site, and generally consists of four components: A thin internal liner to ensure air tightness. Insulation (such as mineral wool). Spacer bars/ brackets to support the metal cladding. Facing metal sheet to provide weather protection.

RAINSCREEN FAÇADE SYSTEMS

- Typically rainscreens are formed of thin, pre-fabricated panels. The rainscreen itself simply prevents significant amounts of water from penetrating into the wall construction. Thermal insulation, airtightness and structural stability are provided by the second, inner part of the wall construction.

SANDWICH PANEL SYSTEMS/COMPOSITE

- Two metal skins are bonded to an insulating core, forming a composite ‘sandwich’ panel. The metal component, can be a wide variety of metals, colours, finishes and profiles.

POLYCARBONATE PANEL SYSTEM

- A polycarbonate panel system is a modern cladding system incorporating interlocking polycarbonate sheets, which have the ability to transmit available natural light into any building whilst providing excellent thermal insulation.
- Polycarbonate panels can be used to provide large-scale rainscreens or curtain walling that bring a monolithic element to the building envelope.
- The system protects the structure from weather damage, as well as dampness and erosion, making it ideal for long-term use in commercial and industrial applications. Polycarbonate is available in a wide range of colours, brightnesses, and opacities.
- Polycarbonate creates a soft, naturally diffused light, making it possible to create translucent effects. It can be combined with feature back-lighting to create a glowing facade.

GREEN ROOF SYSTEM

- A green roof is a type of warm roof that is covered with plants or grass on top of a growing medium, all planted over the waterproofing layer of the roof. It could be a shallow growing medium, planted with sedum or a roof garden with a variety of different sizes of shrubs and plants.
- Green roofs offer many benefits in terms of sustainability, the environment and perceived value. The vegetation converts CO2 into oxygen and filters particulate matter from the air. Green roofs can significantly improve air quality and enhance wellbeing through their visual amenity.
- Green roofs contribute to the sustainable credentials of a development, reducing the need for cooling in summer and providing insulation in the winter.
- A green roof can extend the life span of a roof by shielding the roofing membrance from the effects of sun, wind and rain.
- A green roof can provide a habitat for wildlife and creates usable areas for recreational activities.
- A green roof can also retain rainfall thus preventing water surges into the drainage system.

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