EA. EMPLOYMENT AREA TYPE

The Employment Code sets out the parameters for development within existing and proposed industrial and commercial areas, including business parks. The code prioritises the safe movement into and around sites, design of employment buildings and increasing the sustainability of commercial activities.

DESIGN CODE

1. Movement

Employment areas in Lichfield rely on access from large heavy goods vehicles, which park up on the road or in delivery bays. Some employees walk to work or take public transport, many business parks and industrial estates are very car reliant - detracting from the walkability of streets. Pavements are quite wide and buildings are often setback from the road, allowing opportunities to explore landscaped verges, better integrated parking and safer cycle routes.

EA1.1 Street

Streets should be designed to enable easy movement for a wide variety of vehicles - including large delivery vehicles - whilst prioritising the safety of commuters using active travel options.

EA1.2 Street Safety

All streets within the Industrial Area Type should have a **10 mph** speed limit and be designed to achieve this.

Design for traffic safety can be achieved in a number of ways through the configuration of roads and the design of carriageways. As there will a high proportion of HGVs and larger vehicles ensuring the highway remains visible is crucial to safety of pedestrians and cyclists.

EA1.3 Public Transport

All new Industrial locations should be **within ten minutes walk (400m)** of a bus stop.

These bus stops should provide a service of at least one bus every hour.

If this cannot be accommodated, a contribution outlined within a designated Travel Plan should be made.

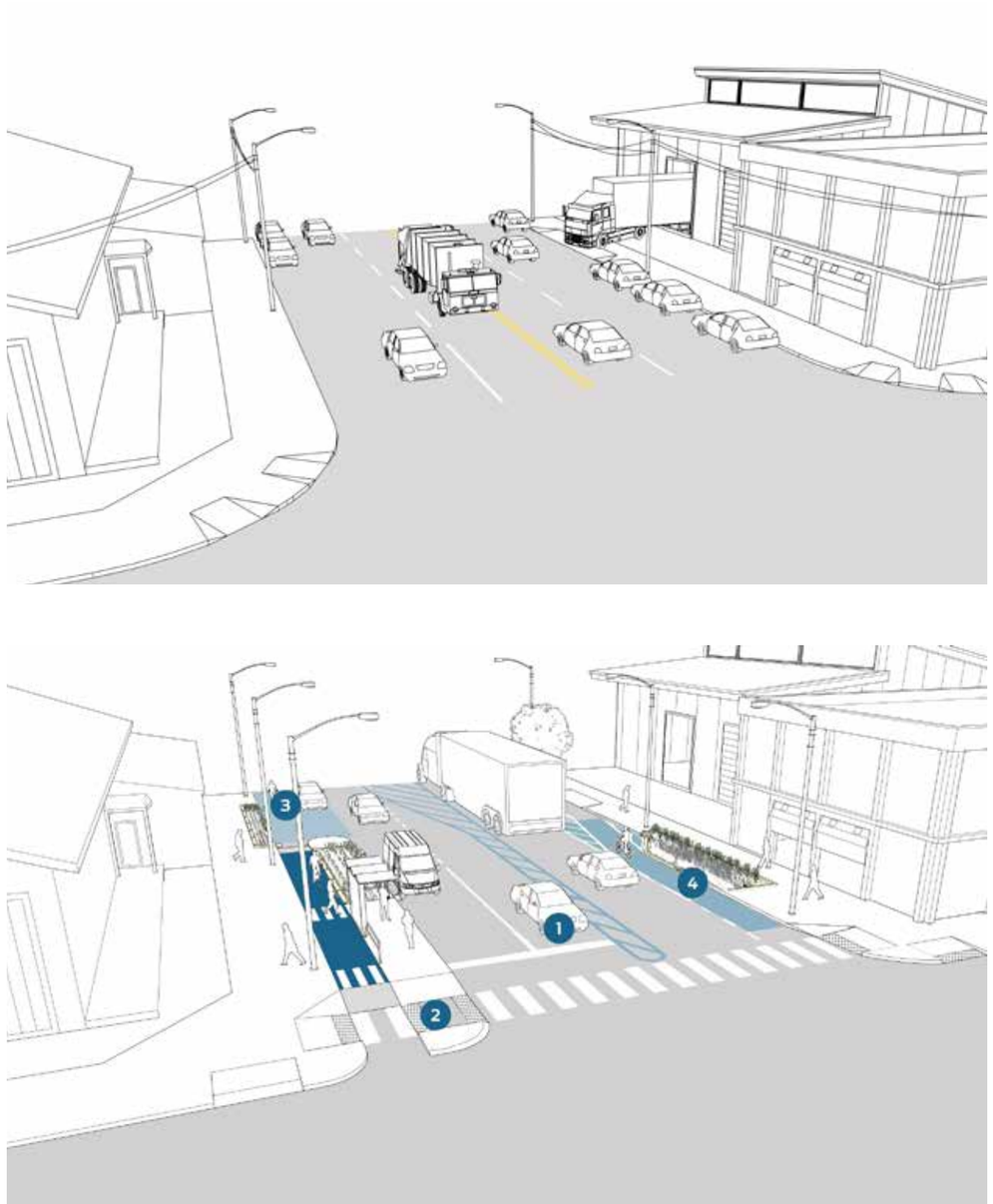


Figure EA.1. Revitalisation of streets in employment area

1 The street has been converted from two lanes in each direction to one, with a left turn pocket where needed. Seize opportunities to align provision of safer cycling and walking conditions with improved storm water infrastructure.

Use green expressions, including biodiversity facilities and street trees, to improve the experience of walking, cycling, and riding transit. Integrate green infrastructure into transit stops and the planting zone to help capture and dissipate water and air pollution from the street.

2 Shorten crossing distances and tighten curb radii to improve pedestrian safety. Where large vehicles are expected to make turns, mountable corner aprons or concrete “pillows” can allow large vehicles to make turns while discouraging car drivers from making high-speed turns.

3 Adding cycle lanes can reveal new space within the cross-section to incorporate green infrastructure, such as bioretention cells in the cycle lanes buffer zone (at least 1.5m if adequate width is available). Cycle lanes are also appropriate for permeable paving treatments. Utilise permeable concrete or porous asphalt to ensure the surface is compatible and comfortable for cyclists.

4 Parking lanes and cycle lanes can often accommodate permeable surface. Limit the amount of storm water run-on from the travel lanes onto permeable pavement parking lanes and cycle lanes, since higher sediment and pollutant loads from industrial travel lanes will incur more frequent maintenance requirements.

EA1.4 Cycling and Micro Transport

Schemes should accommodate segregated cycle lanes on all primary streets.

Employment developments must supply secure cycle parking for **at least 50%** of the total capacity of the intended work force. The level of which should be agreed within a Travel Plan. New employment development should include changing facilities to better facilitate active travel users.

EA1.5 Walking Routes

All streets should provide footways of at least 2m in width on both sites.

New schemes should preserve and link to existing footways.

EA1.6 Emergency Access and Servicing

Emergency vehicles must be able to access to **within 10m** of every building. Care should be taken to ensure that parked cars don't block this access.

Refuse vehicles should be able to access **within 10m** of all external bin stores.

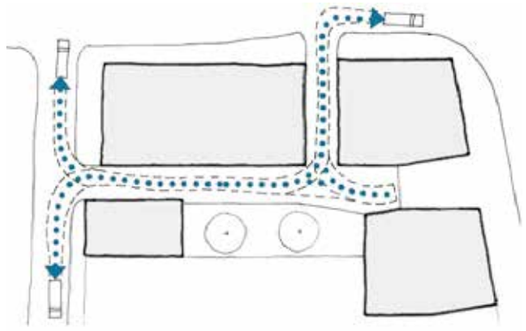


Figure EA.2. Vehicle swept path analysis to ensure service vehicles are able to use & turn within proposed layout

EA1.7 Bins

Adequate ventilated rubbish and recycling facilities must be provided within buildings or other structures for all refuse bins so that they do not obstruct streets and pavements. Bins should be accommodated where possible to the rear of properties, and should be effectively screened.

The bin provision will be split between recycling and waste.

Figure EA.3. An example of recycle bins in employment area

EA1.8 Junctions and Access

All new and redesigned junctions must ensure that there is **at least a 15m** radius to allow HGVs suitable space to turn safely.

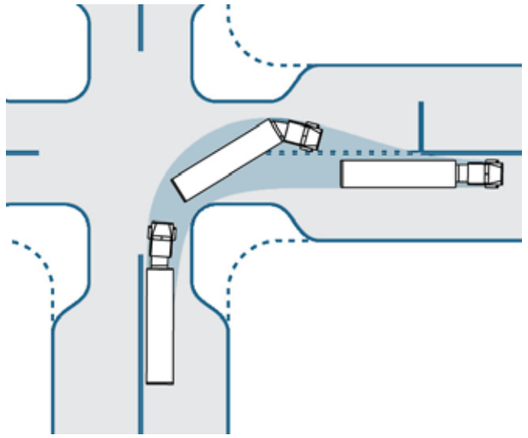


Figure EA.4. Junctions to allow HGVs suitable space to turn safely

EA1.9 Parking Standards

Car parking must be provided in allocated bays within set area within the development. The number of bays should be appropriate to the size of the developments workforce and potential customer base.

50% of parking will enable electric charging points.

EA1.10 Visitor Car Parking

Car parking should not dominate the street scene. Cars should not be allowed to obstruct pavements, and parking bays should be allocated on streets for delivery vehicles and visitor parking. Delivery vehicle parking will be accommodated to the rear of buildings where possible.

EA1.11 Employee Parking

Where parking is provided by businesses, this should be discreetly integrated into rear parking courts, or screened from the street where provided in front parking yards.

Figure EA.5. Surface Car Parking

Figure EA.6. An example of multi-storey car park in Aachen, Germany

2. Nature

Nature and green space must be incorporated and enhanced, with any new development contributing to biodiversity, maximising habitat connectivity, and preventing flooding.

EA2.1 Open Space Provision

Connections to existing green spaces surrounding industrial areas should be enhanced to promote health and wellbeing opportunities for employees. Small communal green spaces should be explored within industrial areas allowing space for lunch breaks and socialising.

EA2.2 Open Space Design

Where schemes include new green space or abut existing green space the following rules will apply:

- Landscaping in the form of shrubs and Trees should be utilised on site boundaries to reduce the visual impact of industrial buildings
- New development should relocate existing trees and provide trees within developments.
- Green and Blue infrastructure will be supported if successfully integrated into new development.

Figure EA.7. An example of landscape treatment to reduce visual impact of industrial buildings in Eindhoven, Netherlands

EA2.3 Biodiversity

In line with national policy, all new development must achieve at least a **20%** Biodiversity Net Gain in line with local policy.

This can include enhancement or restoration of existing habitats, or creation of new habitats that compliment and contribute to the Nature Recovery Network. Developments must demonstrate where and how this habitat can be incorporated within a scheme.

Development proposals must be supported by the appropriate ecological surveys to identify the potential to impact upon species and habitats, and the latest Biodiversity Metric Calculator where required.

Other ecological enhancement measures should be integrated into development sites including landscaping and planting to increase biodiversity, hibernacula creation, wildlife pond creation, and species boxes i.e., for birds, bats, bees, and hedgehogs.

Fragmentation of habitats should be minimised and opportunities for restoration, enhancement, and connection of natural habitats (including links to habitats outside Lichfield District) should be maximised. This includes retaining and integrating ecological corridors that connect to suitable green spaces within a development and the wider landscape to allow the movement of animals and continuation of viable populations.

Green/blue roofs

Natural river

Species rich meadows

Rain water

Figure EA.8. Precedent examples of potential biodiversity measures

EA2.4 Water and Flood

All major applications in Flood Zones 2 and 3, and schemes in Zone 1 of a hectare or more must prepare a Flood Risk Assessment.

An Emergency Plan (EP) should be provided if relevant pedestrian and/or vehicular access and escape routes of a proposed development would be affected during a flood from any source.

Proposals for all buildings, hard surfacing or extensions should submit a Foul and Surface Water Drainage Statement or have standard drainage conditions attached. This is set to increase in the future because of changes to weather events and sea levels due to climate change.

New development adjacent to watercourses must allow public access along the water course. Culverted watercourses must be opened and naturalised.

EA2.5 Sustainable Urban Drainage

All new development must incorporate Sustainable Urban Drainage Systems (SuDS) to achieve a greenfield run-off rate.

Figure EA.9. Surface Water Drainage

Figure EA.10. Intervals to allow water into rain garden

These should be integrated with the overall Landscaping Strategy and existing natural features on site, managed to increase value to wildlife and biodiversity, and additional recreational benefits where possible, while reducing impermeable surface cover.

SuDS can be adapted to suit any site and can contain different and various components, with multiple applications and benefits to achieve sustainable water management. When creating a SuDS network, various factors need to be considered at different scales:

- **Masterplan Scale**: water demand, efficiency, space provision, river corridors, habitats, soil, landscape, geology
- **Site Scale**: existing natural drainage patterns, runoff rates, storm water features, amenities, “place making” and landscape character
- **Building Scale**: water efficiency features, green roofs, living walls, water butts etc.

Please refer to Staffordshire County Council (SCC) SuDS handbook for detailed advice and guidance on SuDS design.

EA2.6 Permeable Surfaces

Large areas of hardstanding surfaces decreases the percolation of water into the ground which increases surface water run-off and in turn contributes to flooding. Given the large amount of exposed surfaces required within Industrial development, all new hard surfaces which are not part of the public highway should be designed to be permeable.

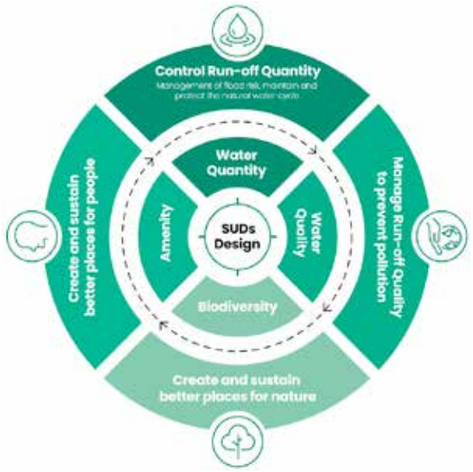
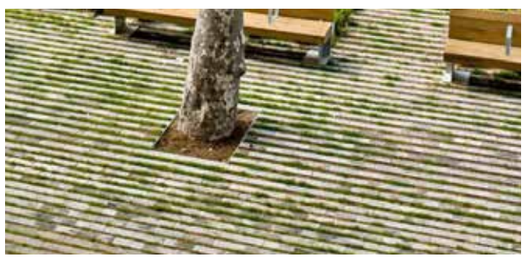


Figure EA.11. Four Pillars of SuDS Design. ©The SuDS Manual C753, Ciria

Green Roof



Permeable Paving

Figure EA.12. SuDS options

EA2.7 Trees and Verges

Primary streets within Industrial Areas should be designed to incorporate green space including grass verges, swales and street trees.

Sites may contain trees protected by Tree preservation Orders or by Conservation Areas. Where works are proposed which are not immediately required to implement a full planning consent, the relevant Conservation Areas, or with restrictive conditions application or notification procedure must be followed. Restrictive conditions or legal covenants relating to trees, must also be considered and authorisation from the enforcing body is to be gained prior to commencing works. Protecting trees, must have written authorisation from Lichfield Council before any works that will impact /harm the tree is undertaken.

In line with local validation guidance an arboricultural survey to BS5837-2012 must be undertaken where there are semi-mature / mature trees /protected trees (TPO or Conservation Area) or hedgerows within the site and/or off-site trees within 15metres of the application site (including street trees). This is irrespective of whether the trees are to be removed or retained. All trees rated A and B (per BS5837-2012) must be retained unless exceptional circumstances can be demonstrated. Arboricultural survey must be undertaken and all trees rated A and B must be retained unless exceptional circumstances can be demonstrated.

Reference To Malting And Barley Crops

All Year Round Interest Colour, Texture And Scent

Evergreen Species Structure

Enhancing Biodiversity and Supporting Wildlife

Figure EA.13. Indicative range of plants and soft landscape

Streets

Introducing Pioneering Species

Post Industrial Pioneer Species

Rustic

Figure EA.14. Indicative range of trees

3. Built Form

The Design Code seeks to create a stronger built form in employment areas, with better definition of fronts and backs, urban blocks and more active frontage to create a safer, more pleasant and more legible urban design.

EA3.1 Grain

The grain of development relates to the number and variety of buildings in an area. Fine grained areas are made up of lots of different buildings whereas coarse grained areas are either made up on a few large buildings or a large number of very similar buildings.

It is recognised in the Employment Area Type there will be a set built form in developments which results in relatively uniform building design. In this instance, uniformity in building design and form is accepted.

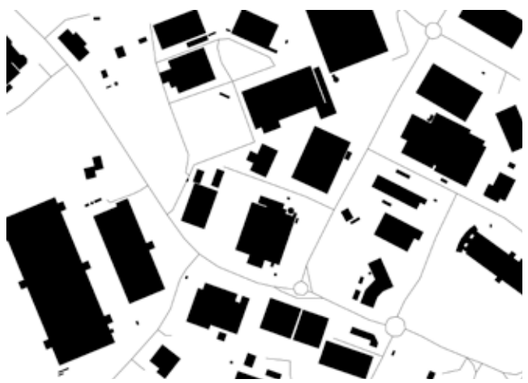


Figure EA.15. An example of urban grain of employment area

EA3.2 Urban Form

Industrial buildings typically have an inward facing urban form due to the intended use. This means that the from external views the design of industrial sites can be seen as abrupt. Designs should aim to increase the visual permeability of sites by allowing lines of site and integrating landscaping into developments. On larger industrial sites, there is a lack of permeability for traffic with service roads remaining unconnected. This is considered acceptable for the intended use.

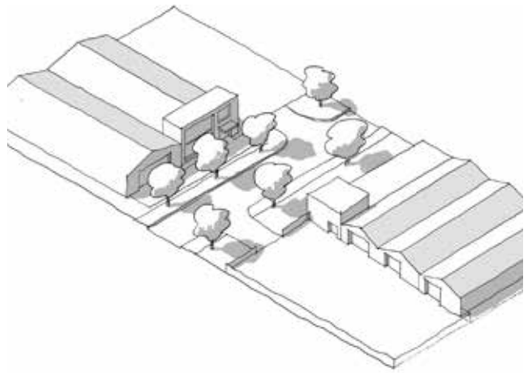


Figure EA.16. Typical urban form of employment area. © NMDC

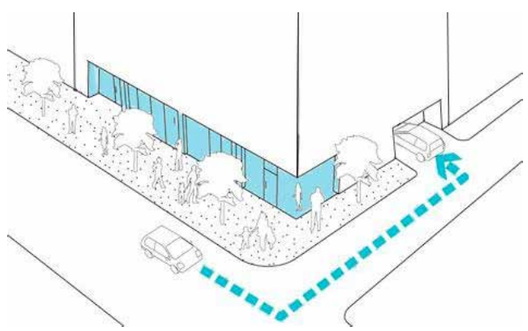


Figure EA.17. Employment building frontage

EA3.3 Building Line

Industrial Developments should follow a building line set by the regulatory plan for the site.

EA3.4 Building Heights

Industrial buildings are required to be large in size in order to facilitate a variety of potential uses an equipment. New development should be built to a **maximum height of 15m** (including plant equipment and parapet). Where sites are **within 25m** of residential properties, this height should be **limited to 12.5m**.

EA3.5 Building Frontage

The relationship between buildings and their surroundings and the interaction between ground floor uses and public realm define the quality of space people experience. Whilst not all ground floors can accommodate active use appropriated design and relationship to street can help people feel safe and comfortable.

With direct impact on streetscape and human activities, the ground floors, which are along a main pedestrian route and facing to public realm, present opportunity to create active frontages. Where uses allow, the design should aim to:

- Provide storefront windows and highly visible entrances for ground floor commercial uses adjacent to the street and sidewalk;
- Limit staff car parking and servicing areas away from the main entrances of sites

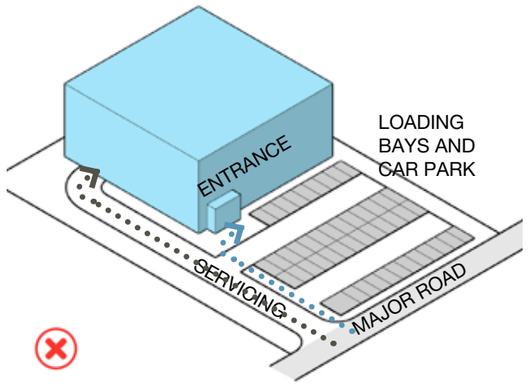


Figure EA.18. Illustrative sketches showing functional employment design with limited relationship to the street (top) and an employment development with frontages which can contribute to an improved street environment (bottom).

4. Identity

The Code does not seek to impose a particular architectural style on new buildings and encourages efforts to promote high quality design including design review, the use of more than one architecture practice using design based tenders or competitions. The following rules relate to the principles that should ally to the design of new buildings.

EA4.1 Scheme design

All new development must be accompanied by a Design and Access Statement that sets out a rationale for the design of the scheme.

This must include an assessment of the character of the area surrounding the scheme. The Lichfield Extensive Urban Survey and Lichfield Historic Environment Assessments would be useful to support the creation of local character assessment.

The Design and Access Statement must show how this analysis has influenced the design of new buildings.

EA4.2 Site Design Codes

Developers of larger schemes must include site design codes as part of outline planning applications. These should replicate the provisions of this design code but can go into far more detail on items such as:

- Architectural design
- Materials
- Roof design
- Boundary treatments
- Colours
- Parking and servicing Arrangements

EA4.3 Architecture

The code does not require a particular architectural style but the following principles must be followed regardless of style. New development should encourage variety in architectural styles and create a stronger connection with the street and the surrounding context.

Ground Floor: Entrances should be clearly highlighted, and windows should face the street.

Materials: Materials should include brick and metal cladding, with strong colour themes and graphics to create identity.

Front Façades: Front façades should be detailed to avoid large monotonous surfaces.

Active Frontages: Active frontage should be integrated where possible through employment areas with the inclusion of cafés and offices.

Windows: Windows should face the street with at least 20% of the front facade glazed. Rooflights should also be integrated into buildings with large internal footprints to encourage natural daylighting.

Rooflines: Pitched roof are favoured to flat roofs. Gable roofs should face the street. Where flat roofs are built, green roofs should be considered.

Figure EA.19. Light industrial facility in Lichfield

5. Public Realm

There are opportunities to improve public realm in employment areas with softer landscape to mitigate flooding and pollution and create a more attractive streetscape. Usable public space and better links through to existing public open spaces should be provided for employees.

EA5.1 Street Type

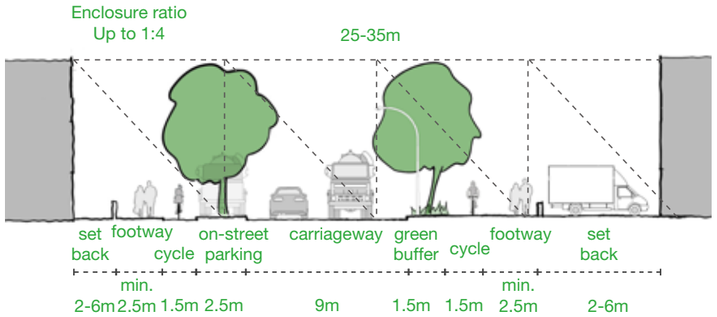
The design of streets will vary with the type of street. Street design must therefore be based on the hierarchy of streets set out either in the coding plan for existing areas or the regulatory plan for new development.

Not all areas will include all streets but the street hierarchy may include:

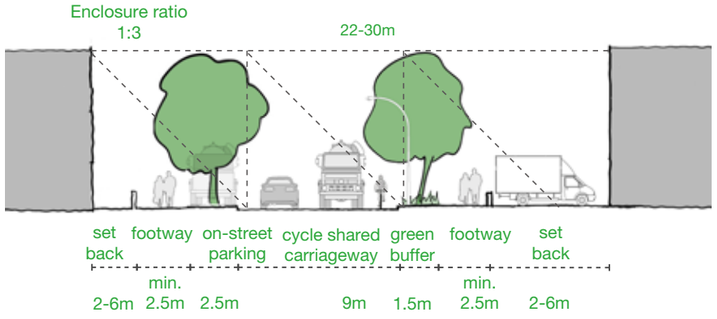
- **Primary Streets**: Key routes outside local centre with relatively high volumes of traffic and bus routes
- **Secondary Streets**: Streets providing access into employment sites and often with other supporting facilities like retail, leisure and food store.
- **Tertiary Streets**: Most other streets providing limited local access.

Street Type	Primary Streets	Secondary Streets	Tertiary Streets
Traffic	Two Way	One or Two Way	One or Two Way
Enclosure ratio	up to 1:4	1:3	up to 1:2
Width between Building Lines	25-35m	22-30m	12-24m
Active Frontage	At least 15% of building frontage	At least 5% of building frontage	No requirement
Design Speed	30mph	30mph	20mph
Building line Compliance	50%	50%	No requirement
Set Back	2-6m	2-6m	up to 6m
Parking	On Plot with driveways and potentially service roads on busy streets	On Plot in driveways. Visitor parking on street in marked bays	On Plot in driveways. Visitor parking on street in marked bays
Cycling	Designated lanes in both directions	On carriageway	On carriageway
Footway	At least 2.5m	At least 2.5m	At least 2m on one side
Street Trees	On at least one side spacings no greater than 30m	On at least one side spacings no greater than 30m	No requirement

Primary Streets



Secondary Streets



Tertiary Streets

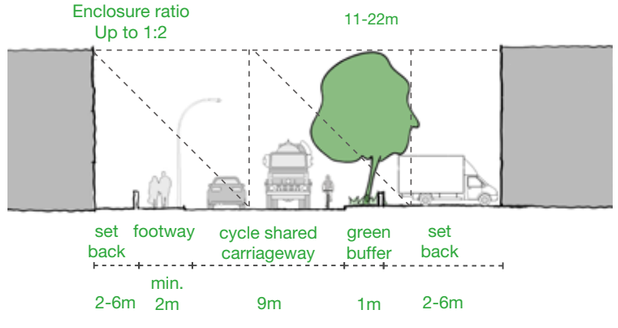


Figure EA.20. Examples of street types in employment area; Top: Primary Streets; Middle: Secondary Streets; Bottom: Tertiary Streets.

6. Uses

Employment areas will mainly provide space for employment use, with light and heavy industry and warehouse/ storage spaces. Office space should also be explored and facilities for employees should be accommodated such as food and drink and local shops.

EA6.1 Employment uses

Employment areas in Lichfield will provide a focus for employment generating uses aligning with occupier demands for accessible locations. New development can offer a mix of employment unit sizes and building types that cater for businesses of varied size and provides them with opportunities for to develop, manufacture and store their production. These are likely to include:

- B2- General Industrial
- B8- Storage or Distribution
- E- Business

Other uses including retail, leisure, and food stores can be provide to complement and support the employment uses.

EA6.2 Extensions and Alterations

Within the Employment Area Type, there will be a variety of existing building designs and forms. If existing industrial buildings require enhancements, they should abide by the following general principles:

- Integrate innovative and contemporary design solutions
- Increase the energy efficiency of the building
- Utilise materials which relate to the character of surrounding areas
- Create a 10% uplift in biodiversity on-site

B2 - General Industrial

Figure EA.22. Example of typical Industrial Units

Figure EA.23. Example of manufacturing Industrial

B8 - Storage & Distribution

Figure EA.24. Example of distribution Centre

Figure EA.25. Example of logistics Centre

E - Commercial, Business and Service

Figure EA.21. Example of offices

7. Buildings

Where employment areas include residential development, industrial activities must not negatively impact on resident health and wellbeing. Visual and noise screening must be considered.

EA7.1 Space Standards

Building Envelope

Delivering flexible facilities can respond to the changing needs of the occupiers while creating the desired economic benefits to the local community.

Health and Wellbeing

The design focus is on creating buildings that are inclusive and encourage health and wellbeing. To facilitate that a consideration should be given at detailed design stage to the layout and factors like:

- natural light
- ventilation
- integration with landscape
- accessibility
- ancillary facilities, including cycle storage, changing rooms, showers etc.

Adaptable Plot

New development within the employment area should be adaptable and flexible.

The distance between two buildings can vary depending on use, location and character of the streetscape.

Flexible Layout

A building footprint (typically measuring 30-36 by 30-36 metres) provides a flexible envelope for different employment uses, and is also flexible to convert on to other uses.

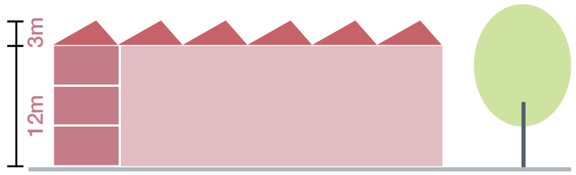


Figure EA.26. Typical Section of employment building

EA7.2 Lighting, Noise and Privacy

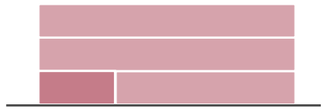
All new industrial buildings and plots must be designed to mitigate against the impacts of lighting, noise and privacy for nearby residential uses.

All external lighting used should face into the site and not result in undue light pollution from sites.

To ensure privacy, first floor windows should not directly face residential dwellings and should have a separation distance of at least 25m.

EA7.3 Security

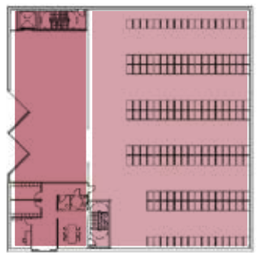
New employment must meet Secured by Design – Secured by Design 2015 guidelines published by the Police.



General industry building _ indicative section

CLASS B2 - GENERAL INDUSTRY

Larger units are formed by multiplying the basic building envelope with a maximum of 3 storeys.



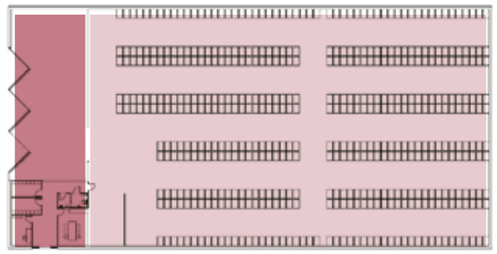
General industry building _ indicative ground floor

General industry building _ indicative upper floor

one storey storage/distribution building _ indicative section

CLASS B8 - STORAGE & DISTRIBUTION

Larger units are formed by multiplying the basic building envelope to produce an extended footprint with a maximum of 3 storeys.



one storey storage/distribution building _ indicative floor plan

Office building _ indicative section

CLASS E - BUSINESS / OFFICE

The typical footprint of office building allows for a flexible configurations depending on the needs of the tenant.

The building can be successfully occupied by one single tenant or subdivided into separate self-sufficient units.

Office building indicative floor plan (single tenant)

Office building indicative floor plan (three tenants per floor)

Figure EA.27. Indicative sketch showing flexible employment building layout

8. Resources

Thoughtfully designed places and buildings conserve natural resources, encompassing buildings, land, water, energy, and materials. The code addresses the challenges posed by climate change by prioritizing energy efficiency and minimizing carbon emissions, aiming to achieve net-zero targets by 2050.

EA8.1 Energy Efficiency

Will be considered as part of the BREEAM Assessment

EA8.2 Environmental Performance

New non-residential development will be expected to achieve a minimum environmental performance of BREEAM Good.

EA8.3 Sustainable Retrofit

Given the need to address the climate crisis, LDC will support the retrofitting of properties.

Sustainable retrofitting improvements should follow an 'energy hierarchy':

- Firstly, reducing the use of energy through heating controls.
- Secondly, upgrading the building's thermal efficiency such as improving existing glazing, draught proofing and insulation to conserve energy.
- Thirdly, installing sustainable building services systems such as renewable energy sources.

It is important to respect historic sensitivities and restrictions on interventions which will impact on the character of conservations area or listed buildings.

Coding principles must be followed to ensure that properties continue to respect the context of the surrounding area.

EA8.4 Passive design strategies

For any new-build design, on-site passive design strategies must be considered from the outset. Passive design uses layout, fabric and form to eliminate or reduce the demand for mechanical heating, cooling, ventilation and lighting. Passive design strategies should be employed to:

- Understand the local, climatic context in which a proposed residential building will be situated.
- Optimise spatial planning and orientation to control solar gains and maximise daylighting.
- Manipulate building form and fabric to facilitate natural ventilation.
- Make effective use of thermal mass to help reduce peak internal temperatures.

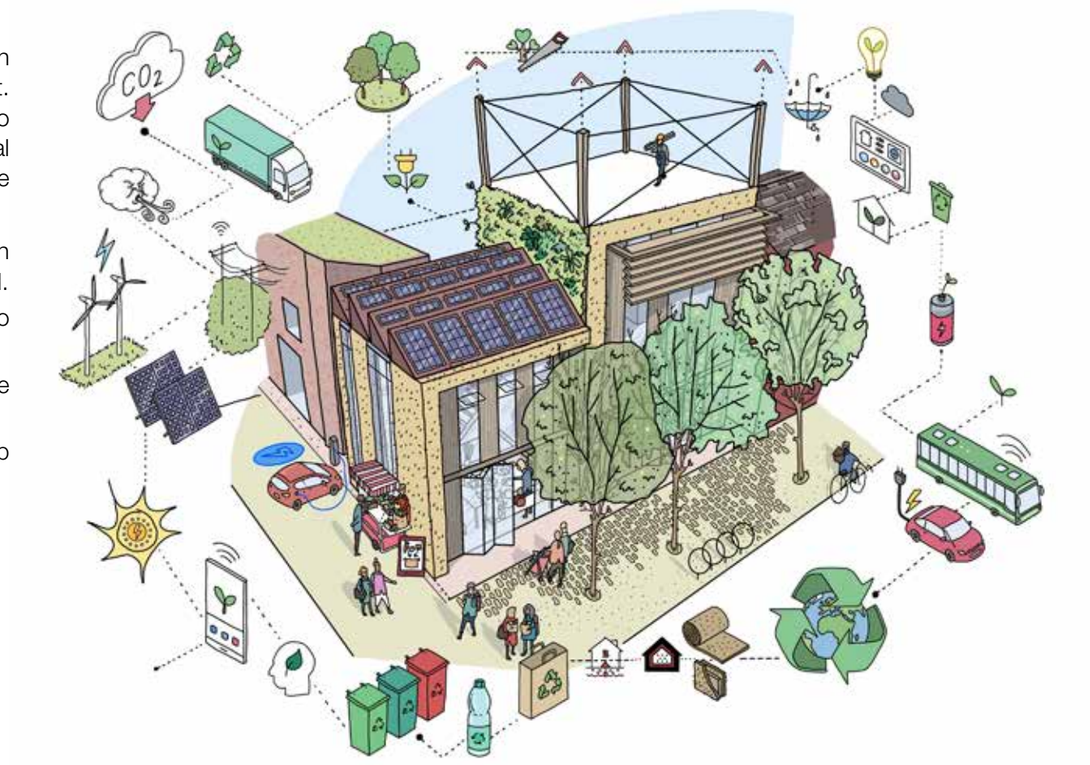


Figure EA.28. Sustainable approach to development

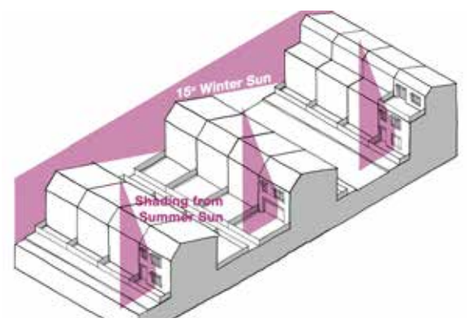


Figure EA.29. Passive design and orientation. © NMDC

Figure EA.30. Ground & Air Source Heat Pumps

Figure EA.31. EV charging point at home

Figure EA.32. Solar Photovoltaic Panels

EA8.5 Renewable Energy

Air Source Heat Pumps

Air Source Heat Pumps can result in significant energy savings compared to gas-boilers. When installing them, the plant must be installed so it is not visible from the street. They should be located away from windows and be attenuated with sound insulation to avoid noise impacts to neighbours

EV Charging Points

At least 20% of new parking spaces should incorporate EV Charging points.

Photovoltaic systems

The inclusion of PV panels or integrated roof tiles will be supported enabling maximum energy capture. PV panels or tiles must be installed uniformly within the roof area to avoid unnecessary clutter and impact to the character of the area. PV panels must not project more than 200mm beyond the plane of the roof and must be at the same angle as the roof pitch.

PV panels should be avoided where they are likely to impact on key views or on the setting of heritage assets.

External Wall Insulation

The finish and materials of external insulation must match the original external appearance of the property.

EA8.6 Circular economy thinking

Before considering any design concepts and solutions for a site, the first step must be to explore all opportunities to re-use or adapt the existing structures on site. This will almost always be the most sustainable solution. Opportunities to refurbish, adapt or extend should be thoroughly explored before any consideration of demolition and new build is made. Where re-use of the structure is deemed impossible, the re-use of the materials embodied in the existing structures must be considered. It is also important to respect conservation areas and listed buildings.

EA8.7 Whole life carbon approach

This covers the operational carbon during a building's lifespan and also the embodied carbon associated with site preparation, construction and end of life demolition. New development should take the steps set out below to ensure that they have sufficiently integrated a sustainable and whole life carbon approach to the energy hierarchy, efficiency and embodied carbon of new build.

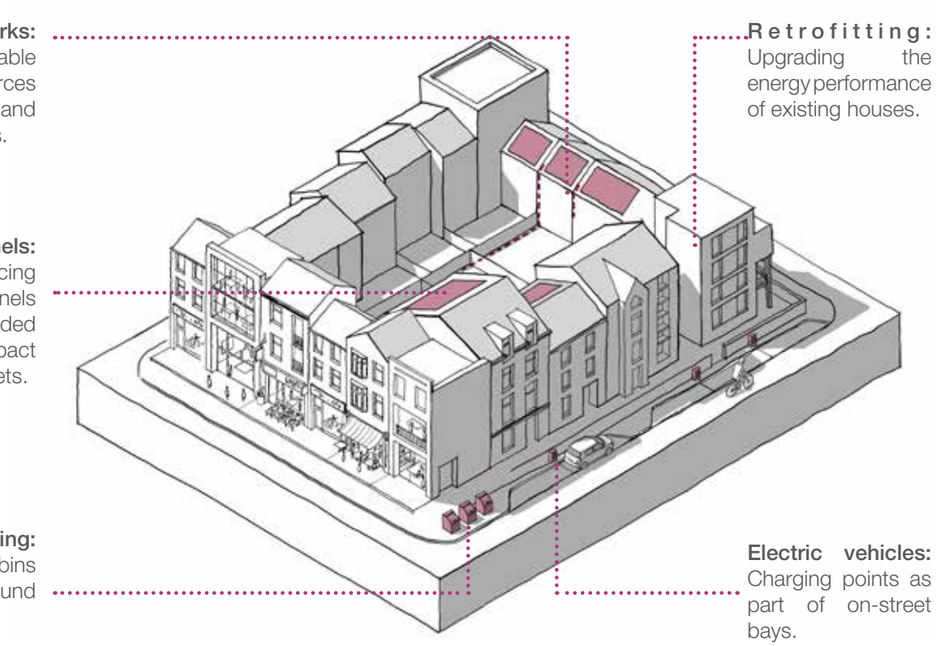


Figure EA.33. Low carbon low energy neighbourhood networks

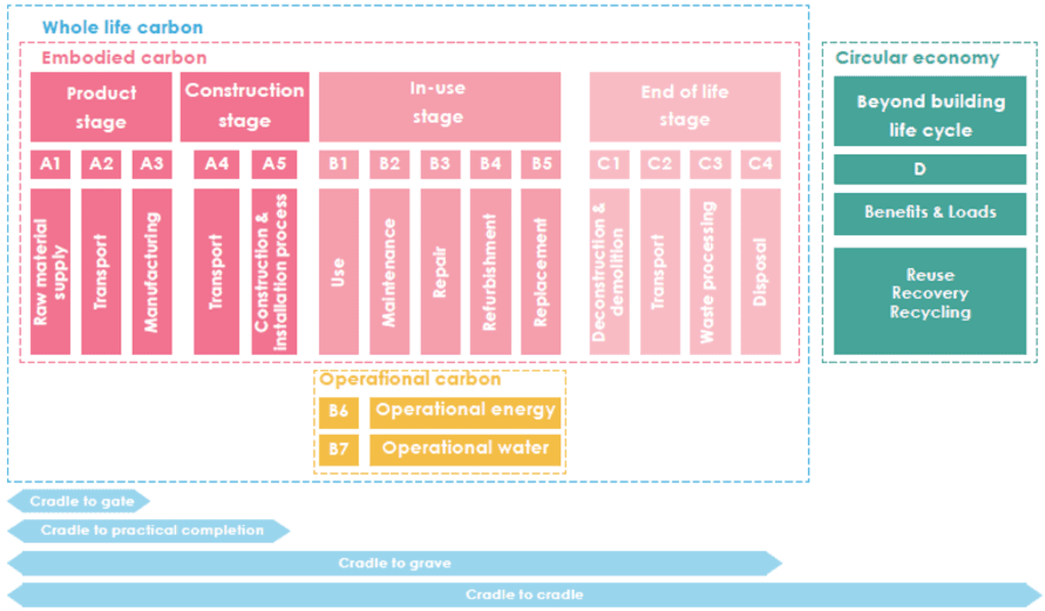


Figure EA.34. The EN 15978 system boundaries, demonstrating the stages constituting a whole life carbon assessment (source: LETI Embodied Carbon Primer)

9. Lifespan

EA9.1 Adoption Standards

In accordance with the Highways Act and its Section 38 provisions, any proposed streets and highways seeking adoption must go through the formal adoption process overseen by Staffordshire County Council.

All streets and public areas that lie outside of the highway boundary that are to be adopted by Lichfield District Council must be designed to the council's adoption standards.

All space that is not to be adopted and which isn't within the curtilage of individual plots must be subject to specified management arrangements such as a management company funded by a service charge.

All schemes including new public realm must include a management map showing the areas to be adopted by each authority and the areas subject to private management arrangements.

EA9.2 Innovation and Future Proofing

The use of innovative, creative or modern design or construction techniques, such as modular building, is encouraged when these result in a high quality of development that responds positively to its setting within Lichfield district. However careful and considerate design will be a pre-requisite from their implementation. All proposed development should work well for everyone and must continue to work well into the future.

EA9.3 Public Consultation

A program of public consultation is required for all new development. This should include meaningful engagement with local residents and businesses around a proposed development as well as wider engagement with voluntary organisations and civic groups.

A statement of community involvement will be required to be submitted with all planning applications setting out the consultation undertaken, the views expressed and the ways in which these have been incorporated into the scheme.

EA9.4 Quality of Life

New development should contribute positively to the wellbeing and quality of life of both employees and the wider community. The scheme should make reference to the Quality of Life Framework published by the Quality of Life Foundation (https://www.qolf.org/framework/).

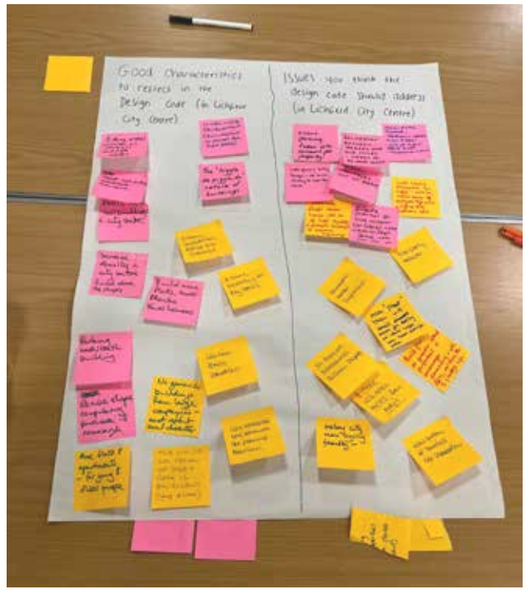


Figure EA.35. Community engagement in Lichfield