

# NORWICH

# Streetscape Design Manual SEPTEMBER 2006





Norwich belongs to all of us



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### FOREWORD



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Norwich City Centre is a great mix of medieval lanes and alleyways, bustling thoroughfares and busy shopping streets. These are places which serve a variety of functions – such as helping people get from A to B, giving access to shops and businesses, or for people to stroll down admiring the city's wonderful heritage and history.

It is vital that people's use of the city centre is not affected by obstructions on the pathways and pedestrian areas, cracked paving, or badly positioned road crossing points.

Norwich City Council's new Streetscape Design Manual sets out how problems and issues like these can be avoided. It sets out guidelines for future improvements and developments, and is available for all partners to ensure they consistently achieve high standards in the design and maintenance of the city centre streets.

### INTRODUCTION

#### WHY STREETSCAPE MATTERS

We need well-designed streets because they:

- make the city more sociable, lively and culturally enriching;
- encourage people to walk and cycle more and drive less, reducing pollution and improving health;
- enable people with mobility and sensory problems to access facilities;
- minimise crime and antisocial behaviour through good lighting and clear sightlines;
- make shops and service businesses more profitable by increasing footfall, which encourages new business investment and existing businesses to remain;
- help the orderly, efficient and safe movement of people and goods;
- allow beautiful buildings and public spaces to be appreciated;
- attract tourists who spend money and boost the economy;
- ensure value for money through durable design;
- foster an integrated approach to service delivery across the City Council and working in partnership with the County Council.

#### WHY WE NEED A STREETSCAPE MANUAL

Streets can only be well-designed if there is a clear set of practices that everyone follows. A manual will help to:

- consolidate existing good practices;
- eliminate and prevent poor practices;
- deliver consistent and visually coherent designs;
- make the design process more efficient;
- make streets easier to maintain and manage;
- save money by eliminating wasted time and materials.

#### INTRODUCTION

#### WHO THE DOCUMENT IS FOR

It is a technical document primarily intended to guide the work of council officers who are responsible for the design, maintenance and management of the streets. It will also be of interest to Councillors who are making executive decisions about investment priorities that affect the street. Groups and citizens with a particular interest in the city's streets may also find the content valuable.

Private developments present an opportunity to make streetscape improvements. New streets within developments and their connection to streets in the wider network should be designed to comply with this document. A commuted sum, to cover the cost of construction and future maintenance should be secured under either Section 106 of the Town and Country Planning Act 1990 or Section 278 of the Highways Act 1980 (as amended by the New Roads and Streetworks Act 1991) where planning consent is contingent on functional or aesthetic improvements to the street. The Manual will also be made available to private consultants and architects designing schemes under Section 38 of the Highways Act 1980.

The activities of utilities companies often degrade the quality of streets by damaging surfaces and vegetation. The County and City Councils will use new powers in the Traffic Management Act 2004 to force utilities to route services so problems are not caused for traffic management, surfaces and trees (section 44). A 10 year moratorium on utility works, other than for emergencies will normally be imposed following street improvement works (section 50).

# STATUS AND RELATIONSHIP WITH OTHER STRATEGIES

This document is a formal statement of City Council policy and was approved by Executive on 20 September 2006 following extensive internal and external consultation. The policies it contains will determine the design approaches and materials used in the street.

It elaborates and draws strength from the streetscape policies (HBE16, HBE18, TRA26, TRA27) in the Replacement Local Plan (November 2004). The priorities for the location of investment and the changes to traffic management arrangements will be determined by the Norwich Area Transportation Strategy and the City Centre Spatial Strategy. The forthcoming Tree Strategy will be the key document governing how highway trees are managed. The design of heritage interpretation material in the street will be consistent with guidance being produced by HEART in association with the City Council.

#### INTRODUCTION

#### THEMATIC SCOPE

This Manual covers the key elements that make up the street surfaces and furnishings, from asphalt to yorkstone and traffic signals to trees. Its breadth reflects the need for the choice and positioning of all the elements to work successfully together.

This document does not attempt to cover each subject in equal depth. Rather it concentrates on remedying poor practices and recognising good practices that have a significant effect on the quality of the streetscape.

There will be special circumstances on individual design projects that mean the standard approaches in this document cannot be applied. Where a design team wishes to depart from the policies this needs to be justified.

#### **GEOGRAPHICAL SCOPE**

The Manual applies to the city centre, which is entirely within a conservation area (see map on page 16). However, the general principles and many of the design solutions will be relevant to the rest of the city and applied as appropriate.

The Manual applies to streets. Squares or plains are special areas, where there is more scope for creativity and individual design. They will stand out more when a simple standard design treatment is given to streets.

#### **REVIEW ARRANGEMENTS**

The Manual is a living document that will be reviewed annually in response to issues that arise when applying it to real design challenges, changing legislation and the availability of new techniques and technologies. The City Council intends to review its standard details, which will be republished as an appendix to this document. The City Council does not believe that this Manual contravenes any current legislation or regulation.

#### STREETSCAPE WORKING GROUP

The small group of City Council and County Council officers that have developed the content of the Manual will become a permanent Streetscape Working Group that will meet regularly to ensure the policies in the Manual are applied to all capital and maintenance works that affect the streets of the city centre. At least one member of the group will normally be represented on design teams to ensure compliance. When this is not possible the group will audit designs or the maintenance approach before the work is procured or undertaken. To avoid an insular professional perspective, the working group will seek advice and opinions from street users and interest groups.

# PRINCIPLES OF STREETSCAPE DESIGN

#### THREE DIMENSIONAL DESIGN

The relationship of street to buildings can only be judged by thinking in three dimensions. For example, it enables designers to avoid positioning street furniture near doorways and to relate the height of lighting columns to the eaves line of buildings. Trees can enhance the streetscape by framing views of buildings.

#### STREET USERS

Understanding how, why and in what numbers people and vehicles use a street informs decisions about space allocation and access. Consideration should be given to the needs of people with mobility problems, who are particularly sensitive to changes in level, the positioning of street furniture and signs, and the nature and condition of surfaces.

#### THE NETWORK

Streets should not be considered in isolation. They are part of a network and good design will link streets both for ease of movement and aesthetically.

#### STREETS ARE SOCIAL SPACES

It is conventional practice to classify roads and streets on the narrow criterion of traffic function. Typically road design aims to avoid conflicts between different road users, by promoting safe and efficient traffic flow. This approach can inadvertently ignore the wider function of the street as a route for pedestrians and cyclists and a place where people live, work and socialise.

#### **RE-EVALUATING RISK**

The effectiveness of traditional approaches to minimising risk to pedestrians by segregating them from traffic and using engineering devices to strictly demonstrate space are being challenged. Increasing evidence suggests that such measures in fact encourage motorists to drive less considerately and deters people from walking because it is frustrating and miserable experience. More dangerous streets can be the result.

#### **CO-ORDINATING THE ELEMENTS**

Pieces of highway infrastructure need to be visually co-ordinated and their number minimised. This can be best achieved through a multi-disciplinary approach to design involving highway engineers, urban designers, traffic engineers, landscape architects, cleansing managers, conservation officers and event planners. This co-ordinated approach allows compromises to be reached so that the overall design concept is realised.

#### QUALITY DOES NOT EQUAL COST

Whether expensive or less costly materials are used to enhance the streetscape, the basic principles of good design are constant. Expensive materials do not automatically result in quality streets and savings can be made by employing restraint and commonsense in the specification of materials.

### PRINCIPLES OF STREETSCAPE DESIGN

#### PROCUREMENT

Sourcing materials from local suppliers has multiple benefits. It supports local employment, reduces the environmental impact of transporting goods, reinforces local distinctiveness and allows designers to discuss their precise requirements with fabricators and suppliers face to face. Reasonable attempts will be made to ensure that materials are sourced from suppliers that uphold accepted standards of ethical business practice.

#### REINFORCING LOCAL DISTINCTIVENESS

At the start of a design project an audit of existing materials and street furniture should be undertaken. Any historic or locally distinctive features should be identified so that efforts can be made to retain them in the new design. Where possible such materials should be salvaged and reused in order to minimise the impact on the environment. The judgement about whether to reuse materials will be influenced by the costs of making salvaged materials suitable for re-use as well as the costs of storage.

#### DESIGNING FOR EASE OF MAINTENANCE

Standards of maintenance have a great effect on people's perception of street quality. Good design reduces the future maintenance burden by selecting materials on the basis of whole life costing. It is particularly important that designs assist rather than frustrate the cleansing of streets.

Maintenance engineers, cleansing managers and landscape maintenance should be involved from the start of a project and have an opportunity to advise the design team on the maintenance implications of the choice and application of materials.

Capital works can impose a strain on maintenance budgets, leading to difficulties in maintaining new schemes. When works are planned the revenue implications should be assessed and reported to members. Schemes should not proceed where a significant increase in maintenance costs will not be covered by a commensurate increase in the maintenance budget.

#### **GOOD DESIGN TAKES TIME**

The design process cannot be rushed. There needs to be sufficient time to write a robust brief, which clearly identifies the task, its objectives, and its constraints; co-ordinate the professional inputs to the design development and consult the public with enough time to adjust the design in response to legitimate comments and criticism.





Left: Insufficient footway width. Magdalen Street

Right: Interrupted and inconvenient pavement. Farmers Avenue

#### ALLOCATION OF SPACE

The street space dedicated to different transport modes often does not reflect the number of people walking and in vehicles. Before the recent improvement of St Stephen's Street approximately 60% of the street space was being used by 650 vehicles an hour compared to a meagre 20% for 6200 pedestrians.

Pedestrian movement can be made more comfortable and convenient through the widening of footways. Narrowing the available carriageway not only improves pedestrian movement but is also known to reduce vehicle speeds and encourages drivers to behave in a more considerate manner. The space reclaimed from the carriageway can be transferred to the footway. We will aim to achieve footways that are a minimum of 2 metres usable width, which is the space required for two wheelchairs or pushchairs to pass. Wider footways also allow cleansing vehicles to operate more easily.

Cyclists can be endangered and intimidated by vehicles that try to squeeze past where build-outs and refuges create pinch-points in the carriageway. These should be avoided unless the safety benefit to pedestrians of the feature outweighs the problem for cyclists.

#### SIMPLE KERB LINES

Devices that manage traffic and parking, such as kerb build-outs, splitter islands and staggered pedestrian crossings, tend to fragment the streetscape. Kerb lines will run parallel to buildings, marking the traditional distinction between pavement and carriageway. This applies equally to streets where there is a level difference between pavement and carriageway and those on one level with an embedded kerb. We will only deviate from the principle of simple kerb lines when:

- building out the pavement would provide a pedestrian crossing that is significantly more convenient and safe;
- the management of traffic or parking would otherwise become problematic; or
- the lack of a build out would require the use of more unattractive hatching.





Top: Crossing on the desire line frustrated. Tombland / Queen Street

Bottom: Crossing on the desire line frustrated. Ber Street / Timberhill

#### PEDESTRIAN DESIRE LINES

The first question to ask when designing for pedestrians is: where do people want to walk? This is known as the pedestrian desire line and we should strive to enable people to cross carriageways on it. Pedestrians should be able to cross the carriageway on this line and junctions should be designed so that a safe and accessible crossing point can be provided in this location without the need to erect pedestrian guardrail.

#### JUNCTION CORNER TIGHTNESS

Designing corners to accommodate the swept path of the largest vehicles can result in footway width being reduced and the widening of side roads. However. failure to accommodate the turning movement of large vehicles may result in the over-running of the adjacent footway, creating a maintenance and safety liability. We will ensure that junction radii are as small as possible whilst still accommodating the turning movements of the largest vehicles anticipated. Larger vehicles should be accommodated within the overall geometry of a junction, not necessarily within the lane markings.

#### SIDE STREET ENTRIES

When a lightly trafficked side street joins a main street the junction layout should be designed in such a way that pedestrians do not have to deviate from their desire line. Narrowing the bell mouth of a side road and placing the crossing point on a speed table can assist this. This not only reduces the physical distance that the pedestrian has to cross, but also reduces vehicle speeds entering or exiting the side street. A raised table across a side street junction can pose a hazard for two wheel vehicles, as when turning into the side road they meet the ramp at an angle while they are leaning over. The location and gradient of the ramp face will require very careful design to minimise the risk.







#### **ZEBRA CROSSINGS**

Zebra crossings empower pedestrians by giving them the right to cross. There are many locations away from main junctions where a zebra is the most appropriate form of crossing. Some of these could be on a raised table where approach speeds are higher than desirable. There is scope to replace some existing pelican crossings with zebras. Zebra crossings should be carefully designed to ensure they are conspicuous to drivers while sympathetic to the streetscene.

Above: Zebra on a table Theatre Street

Above centre: Raised table at uncontrolled crossing. St. Stephen's Street

Above right: Central reservation refuge defined by raised kerb. Agricultural Hall Plain



#### RAISED TABLE CROSSINGS

Placing crossings on raised tables can slow traffic on the approach. thereby improving pedestrian safety. We will continue to put uncontrolled crossings on raised tables. Controlled crossings (other than zebras) will be distinguished by not being raised. We will continue to block pave the surface of both types of crossing in Tegula (harvest) so they are more visible. The length of the table at an uncontrolled crossing should extend no further then the pedestrian desire line to avoid an excessively long table that is visually incoherent and allows traffic speeds to increase across it.

Away from the designated crossing point there will be a 25mm kerb upstand to indicate the edge of the footway to people with visual impairments.



#### STAGGERED CROSSINGS

Staggered crossings should normally be avoided because thev increase crossing distances and produce convoluted routes for pedestrians. The extent of the pedestrian waiting area within the central reservation at a staggered crossing has traditionally been enclosed by pedestrian guard railing, which prevents people crossing outside the designated area, even if it is safe to do so. Where road safety is not compromised the central waiting area should be delineated with raised kerbing rather than guard railing, which is a more attractive and easily maintained solution.





Far Left: Awkward and unattractive pavement cycle lane. Westwick Street

Left: Subtly delineated cycle threshold. St. Margaret's Street

#### CYCLE CONTRAFLOW

Cyclists should be accommodated on the carriageway wherever possible. Two-way cycling should be allowed and encouraged on every street in the city centre, unless there is some overriding practical or safety reason. This will often require a contraflow facility. In many cases the treatment can be restricted to the entry and exit point rather than marking the full length of the lane. This may require special approval from the Department for Transport.

#### CONSISTENCY OF SURFACES

Ground surfaces can create an appearance of calm unity in the street when a limited palette of materials is consistently applied to different street types. This standardisation eases maintenance, thereby ensuring that the appearance of the street does not degenerate over time because like for like replacement is unfeasible. The materials prescribed in the table below are already present in large quantities in the street and their use should be consolidated. The application of these materials is based upon two considerations:

- Quality of the street architecturally distinguished buildings in busy locations deserve prestige materials. The category that applies to particular streets is shown on the map overleaf; and
- Traffic status of the street where vehicles use a street the material must be capable of withstanding vehicle loading.

TRAFFIC STATUS	SECTION OF STREET	STREET QUALITY		
		STANDARD	SUPERIOR	PRESTIGE
PEDESTRIAN LANE	FOOTWAY	NOT APPLICABLE	SAXON (NATURAL)	YORKSTONE
	CARRIAGEWAY	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE
	KERB	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE
SINGLE LEVELSHARED SURFACE WITH VEHICLE ACCESS	FOOTWAY	NOT APPLICABLE	SAXON (NATURAL)	YORKSTONE
	CARRIAGEWAY	NOT APPLICABLE	TEGULA (PENNANT GREY)	GRANITE SETTS OR TEGULA
	KERB	NOT APPLICABLE	CONSERVATION	GRANITE
FOOTWAY AND CARRIAGEWAY ON SEPARATE LEVELS	FOOTWAY	ASPHALT	SAXON (NATURAL)	YORKSTONE
	CARRIAGEWAY	ASPHALT	ASPHALT	ASPHALT
	KERB	BS CONCRETE	CONSERVATION	GRANITE

#### STREETSCAPE QUALITY PLAN





#### PAVING SLAB SIZE

Traditional large rectangular paving slabs are more visually appealing than smaller square sizes. Larger slabs are susceptible to cracking under vehicle loading although new fibre reinforcement technology allied with thicker slab sizes makes them more durable and avoids the need to protect the pavement with bollards. Saxon slabs will normally be fibre reinforced in the size 450mm x 600mm x 63mm. Yorkstone will normally be 450mm x random lenghts x 75mm. The weight of larger slabs and the increasing stringency of manual handling regulations will mean that mechanical lifting equipment will need to be used.

#### PAVING SLAB BOND PATTERN

Paving should be laid using a stretcher bond at right angles to the direction of travel. Whole and half slabs should be laid next to the kerb to allow for easy replacement when cracking occurs due to vehicles overriding the pavement. Stack bonding of paving slabs should not be used – it emphasises imperfections in the alignment of paving and creates unattractive wedges of paving in pavements of variable width.

Above: Kerbs and channel expresses kinks in street. St. Andrew's Hill



#### DRAINAGE CHANNELS

Many lanes and shared use streets in Norwich city centre have a locally distinctive design of drainage channel consisting of a 300mm wide granite kerb flanked by a linear course of granite setts or Tegula concrete blocks. As well as fostering a sense of place and being a visually bold expression of the street line, it also allows granite kerb stones to be recycled. Some maintenance problems have resulted from early design details where a single line of setts was laid at an angle leading to the loss of jointing material. The essential features of the design will continue to be used but with the setts laid to a shallower angle. Poorly specified drain gullies can be a hazard for cyclists. The direction and width of slots must not trap or deflect bicycle wheels.

Above: New channel detail. Lower Goat Lane



#### SURFACE SMOOTHNESS

Pedestrians, cyclists and people with mobility impairment can find some surfaces uncomfortable, such as flint cobbles and setts with recessed mortar joints. The choice of material and construction detail should ensure surfaces are sufficiently smooth to avoid discomfort.



#### COBBLES

Flint cobbles are a locally distinctive material that has been widely used as an attractive edge to planted areas, irregular building lines or as a pedestrian deterrent. It should not be used where people want to walk, where there are particular cleansing problems due to the tendency for detritus to accumulate between the cobbles or where a ladder would need to be erected.



#### STREET FURNITURE MOUNTING SURFACE

Groups of street furniture can be neatly unified by positioning them within a panel of contrasting footway material such as granite setts or cubes. This technique also provides additional visual and tactile warning to blind and partially sighted people that they are approaching an obstruction.

Above left: Smooth surface. Lower Goat Lane

Above centre: Sensitive use of cobbles. Tombland Alley

Above right: Street furniture mounting surface. Market Avenue



#### CHANGES IN SURFACE MATERIALS

Where two different materials abut each other careful consideration should be given to the jointing detail. The break of materials should coincide with a strong feature such as a party wall, building return, kink in the street, variation in the width of footway or tactile paving stem. The joint between two paving materials should be neatly demarked with a seam of setts or blocks. When this marks the entry to a distinctive quarter of the city centre, an insignia or motif could be incorporated into the seam to mark the threshold into the quarter.

Above: Seam of setts. Lower Goat Lane





#### FOOTWAY CROSSOVERS

Where vehicles are required to cross the footway, not only do the crossovers need to withstand the additional loading but also they should not interrupt the footway, so that ease of pedestrian movement and visual unity are not compromised. Footway crossovers should be surfaced in either granite setts with Yorkstone footways or in Tegula (harvest) blocks with Saxon footways.

Above: Crossover interrupts footway. St. George's Street Above: Crossover does not interrupt footway. King Street

#### DEMARCATING HIGHWAY BOUNDARIES

It is important that small areas of private land that form part of the functional pavement do not break up the unity of a paving surface. We will seek landowners' agreement to pave on their land so that a unified surface runs from kerb to building. When new developments are constructed we will expect the developer to pave these areas in a material that matches the adjacent pavement. Where a division in paving material does not mark the public highway boundary we will mark the boundary between public and private land using widely spaced brass studs.

#### TACTILE PAVING COLOUR

Tactile paving indicates the presence of pedestrian crossings and certain hazards to blind and visually impaired people. Central government "Guidance on the use of tactile paving surfaces, DETR 1998, para.1.5.1.1 and 1.5.6" allows some flexibility in the use of colours within a Conservation Area or in the vicinity of a listed building. Concrete tactiles surrounded by a band of dark grey Tegula blocks will be used with Saxon paving and and Yorkstone tactiles will be used with Yorkstone paving. Cast iron units will be trialed as a possible prefered unit.



#### UTILITY INSPECTION COVERS

Conventional utility inspection covers can be unsightly and detract from otherwise attractive surroundings. Covers can be inset with the adjacent paving material. Following consultation with utility companies we will use inset utility inspection covers in the following circumstances:

- where an ornate paving pattern would otherwise be spoiled;
- where a cover straddles materials; and
- within panels of tactile paving.

We will encourage utilities to design more attractive covers and to locate these in consultation with Norwich City Council.

Above: Covers mar ornate patterns. Arcade Street



#### COLOURED CARRIAGEWAY SURFACES

Coloured surfaces are sometimes used to aid enforcement of bus lanes, bus stops and cycle lanes. These surfaces are unattractive and a maintenance liability, especially when they become oil stained and utilities fail to reinstate them properly. Colouring the surface red will only be undertaken exceptionally:

- to aid enforcement at thresholds to traffic management regimes where extensive abuse would otherwise occur; and
- in cycle lanes and advance stop areas when required to deal with an anticipated serious safety problem.

Above: Two colour carriageway Fye Bridge Street



#### **ANTI-SKID SURFACES**

Anti-skid surfaces can be very obtrusive and do not rely on their visibility to achieve a road safety benefit. We will use grey rather than buff anti-skid surfaces or use other methods to raise the polished stone value to the required level.

Above: Anti-skid surface Duke Street





Above Top: Clear zoning. Prince of Wales Road

Above Bottom: Lack of zoning. Tombland

#### **FOOTWAY ZONING**

Zoning the footway helps to order the arrangement of street furniture creating a harmonious appearance and a clear route for pedestrians and cleansing vehicles. It can be divided into three zones:

- kerb typically a 450mm wide strip that is clear of furniture to prevent damage by and to vehicles;
- furniture / planting this zone is only possible if the unobstructed footway is over 2 metres wide; and
- unobstructed at least 2 metres wide and entirely free of objects for the unhindered movement of pedestrians along the footway. Where the pavement widths are narrower than 2 metres essential furniture will be positioned tight against buildings. Wayleaves can be negotiated to fix signs and street lights to buildings and locate furniture within private areas. Wayleave negotiations are, however, time consuming and this should be factored into the project's programme.







# CO-ORDINATION AND COMBINATION

Items of street furniture can often be combined to minimise their number. Co-ordination between the various disciplines such as lighting, traffic signals, tree planting, planning and traffic signs will need to take place in order to identify the opportunities for combining equipment and fixing to buildings.

Above: Accumulation of clutter. St. Andrew's Street

#### FURNITURE STYLE AND COLOUR

Norwich needs two sets of street furniture a contemporary one based around the use of stainless steel for streets fronted mainly by modern buildings and a traditional one based around cast iron or ferrocast for streets with historic buildings. The traditional set will be the successful octagonal designs for which the City Council has design rights and which are locally distinctive. The colour for traditional street furniture and cabinets will be dark juniper green (BS 12B29). Lighting columns, sign and signal poles will be factory hot dip galvanised and heat treated powder coated graphite grey (RAL7024), to prevent them going rusty.

#### **COMBATING FLY POSTING**

Previous anti fly posting finishes were unsightly and in some instances looked worse than the fly posting they were intended to discourage. Advances in the industry now mean that anti fly posting paints, such as Dacrylate Margard, are now finely textured and therefore less visually intrusive. Where a fly posting problem exists, poles, columns, cabinets and posts should be treated with the smoother anti fly posting finishes. The best finish is achieved when applied in the factory.

Below: Old-style heavily textured paint Upper King Street





#### **BIN TYPE**

Bins should be sturdy, conceal dirt, easy to clean, have vertical sides to avoid encroaching into valuable footway space, sufficient capacity, rat bait trays, apertures large enough for a 14in pizza box, easy to empty and look appropriate in their surroundings. The Escofet bins that have been used extensively around the city centre do not satisfy any of these criteria and their specification should be discontinued.

Above: Successful Norwich cast iron bin. Tombland



#### TAKE AWAY BINS

Fast food restaurants that offer takeaway food generate large amounts of litter and therefore require extra bins. Operators are often encouraged to provide bins in front of the restaurant but these are rarely co-ordinated in style with adjacent street furniture and often feature corporate advertising. We will ensure that any bins funded by a fast-food operator will be City Council standard bins.

Above: Oversized plastic take-away bin. Hay Hill

#### **BIN POSITION**

Bins should be positioned near pedestrian flows and generators of waste. They should not be closer than 1.5 metres to a seat due to unpleasant smells and insects.









#### BOLLARDS

Norwich has a handsome and durable local design for cast iron bollards that is part of the suite of traditional street furniture. We will continue to use it in more historic locations. Another indigenous design has been used at the entrance to churchyards where its delicacy of appearance is appreciated and relative structural weakness matters less. In modern streets timber bollards or brushed finish stainless steel reinforced with concrete should be used. In congested pavements bollards should be a minimum of 900mm tall to avoid pedestrians colliding with them.

Top Left 1: Traditional cast iron bollard positioned oddly. London Street Top Left 2: Delicate cast iron design for church setting. St. Andrew's Plain

#### BENCHES

Benches with a combination of timber seat and arms on a metal frame are the ideal solution for comfort and strength. The newly installed seats in St. Stephens will be the standard seat design for modern streets. Circular seats around trees are a distinctive feature of the Norwich streetscape. They celebrate the presence of the tree and provide a shaded place to sit with a variety of outlooks.

Bottom Left 1: Tree seat. London Street Bottom Left 2: Bench. St. Stephen's Street



#### **CYCLE STANDS**

At present there is a lack of cycle parking. This can lead to haphazard parking that obstructs the footway and endangers people with slight problems. If targets to double cycling levels are to be achieved there will need to be a commensurate increase in the amount of cycle parking. This should be located as close as possible to destinations. It should be under constant surveillance by the public. It is generally preferable to have small groups of stands spaced along a street rather than a large group sited at one end of the street. Stands must be of the post and rail type, preferably with a lower rail to accommodate children's bikes. Stands should be located on a level area. If this is not possible they should be orientated at right angles to the slope to prevent bikes from rolling away. The Norwich octagonal bollard has been successfully adapted for use as a cvcle stand in historic streets. In modern streets Sheffield-style brushed finish stainless steel stands should be used. An alternative that is suitable for modern and historic street is oak posts with galvanised metal rails, which are simple, easy to make, low cost and locally distinctive. A paint finish is not suitable due to the high maintenance requirement.

#### PEDESTRIAN GUARD RAILING

Guard railing has sometimes been overused. It narrows footways by up to 400mm, prevents pedestrians crossing away from designated routes if they judge the road to be clear and reduces visibility between motorists and wheelchair users. It also clutters views. We will use fewer pedestrian safety barriers on the pavement edge. The scope for reducing the quantity of barriers is greater when speed reduction measures are employed. Vertically curved barriers are more expensive and block a larger area of footway. We will use vertically straight barriers. Barriers will be left in their galvanised state because wear and tear and infrequent painting mean that painted barriers quickly look shabby.

Above: Oak cycle stands. St. Benedict's Street







#### PAVEMENT CAFES

Pavement cafes bring life and colour to the streets. A pavement café must:

- leave sufficient footway space for the volume of pedestrians using the street;
- be enclosed by railings if they could be accidentally walked into by blind or partially sighted people;
- not be left outside between November and February when nobody uses them; and
- not display strident advertising.

#### STREET TRADING

Street trading can bring vitality to the street. However, poor positioning and design can spoil the streetscape. Care will be taken to ensure that pitches are appropriately located, that poor quality design is discouraged and that structures are removed at the end of the day's trading.

Above left: Street trading enlivens corner. Upper King Street

Above centre: A board. Exchange Street

Above right: Adverts in phone boxes. White Lion Street

#### **A BOARDS**

A-boards are street clutter forming a pavement obstruction and a trip-hazard. They are dangerous for blind and partially sighted people. We will work with the business community to reduce the quantity of A boards and are prepared to insist that boards are removed from the highway. There are likely to be special circumstances, such as where a business serving customers does not have a shop front onto the street, where a sensitively positioned A board of a modest size will be permitted.

#### ADVERTS IN TELEPHONE BOXES

Several years ago payphone operators began to display adverts on the glass of telephone boxes. These adverts transform a discreet item of street furniture into visually distracting hoardings.

The Government has announced its intention to give local authorities the power to decide whether to allow these adverts in conservation areas. We will use this power to exclude such advertising from the city centre.

# STREETSCAPE COMPONENTS - LIGHTING, TRAFFIC SIGNALS & CCTV



Above: Urbis Polo Prince of Wales Road

#### **HIGHWAY LIGHTING**

A good quality lighting scheme that enhances the streetscape must do more than merely shed sufficient light on the street. The column and lamp should be attractively designed and suit the setting. For example, columns should not loom over adjacent buildings. In wider streets and especially those with trees that reduce the amount of light reaching the footway, dedicated footway lighting on lower brackets can be mounted on lighting columns positioned at the kerb edge. Some of these wide streets are also ideal for attaching eye-catching banner event advertising and Christmas decorations to columns. Lighting columns need to be strong enough to withstand these additional loadings.

Recent highway schemes have employed the Urbis Polo luminaire on an elegant and simple tapering column that is suitable for historic and modern streets. It is capable of taking a lower lamp for pedestrians and the mounting of banners or Christmas lighting. However, this design is significantly more expensive than more utilitarian alternatives and it cannot therefore be adopted as a universal solution for new schemes. It can be justified in streets that deserve a higher standard of fitting due to their architectural quality or potential for event promotion. Columns will be painted graphite grey (RAL7024) and where flyposting is considered a nuisance an anti-flyposting treatment shall be applied up to a height of 2.3m.

# STREETSCAPE COMPONENTS - LIGHTING, TRAFFIC SIGNALS & CCTV



#### BUILDING-MOUNTED LIGHTING

Lighting columns may present an obstruction to users on narrow footwavs and can interfere with the view of attractive buildings. In these situations consideration should be given to mounting these lighting units on adjacent buildings. There are already approximately 2000 lanterns mounted on buildings in the city centre which make an important contribution to streetscape quality.

Above: Building-mounted lantern. Elm Hill



#### SIGNAL HEADS

New slim signal heads reduce the visual intrusion of a signal head in profile. These will be used as standard in Norwich once the current technical problems with the product have been overcome. The visual intrusion can also be reduced when viewed from the front and rear by omitting white reflective backing boards. We will not use backing boards where the signals are bright LEDs.

Above left: Slim signal head. Prince of Wales Road Above right: No backing board. Ber Street

# STREETSCAPE COMPONENTS - LIGHTING, TRAFFIC SIGNALS & CCTV



#### SIGNAL POLES

Signal poles should be an appropriate length for the equipment mounted on them. Often full height poles are not required.

Above: Stub pole. Prince of Wales Road



#### SIGNAL CONTROLLER CABINETS

Traffic signal controller cabinets are utilitarian structures that can reduce footway width and relate badly to adjacent buildings and street furniture. Cabinets should be positioned to blend in against a background and not obstruct motorists' view of small children near a crossing.

Above: Discreet cabinet. Tombland



#### CCTV

CCTV cameras provide important surveillance of the streets to deter and detect crime. Cameras should be mounted on buildings or lighting columns where this will give an adequate view to avoid clutter. When locating a camera consideration should be given to how it will be maintained. For example, there may need to be room for a tower wagon next to it.

Above: CCTV camera. Exchange Street

# STREETSCAPE COMPONENTS - SIGNS & ROAD MARKINGS



#### **KEY QUESTIONS**

When designing and specifying a traffic sign and / or road-marking care should be taken to ensure that the legal minimum number and size are specified.

To aid in the design process the following questions should be asked:

- 1 Can the traffic regulation order be made less complicated to reduce the size and number of signs?
- 2 What message are we trying to convey?
- 3 Is the sign a legal requirement?
- 4 Are we using the smallest possible permissible 'x' height or sign size?
- 5 Can the sign be retro-reflective rather than illuminated?
- 6 If the sign is visually intrusive can special authorisation be obtained from the DfT for a variation in sign design / omission?
- 7 Is there flexibility to position the sign away from attractive buildings?
- 8 If it cannot be moved away from an attractive building would it be better to mount it on the building? (This would require a way-leave agreement with the building owner).



#### **NO ENTRY**

The Traffic Signs Regulations and General Direction 2002 allows 'No entry' signs to be displayed on only one side of streets with carriageways that are narrower than 5m. We will exploit this opportunity.

Above: Unnecessary and oversize no entry sign. Princes Street

# STREETSCAPE COMPONENTS - SIGNS & ROAD MARKINGS









#### **TEMPORARY SIGNS**

Temporary signs are sometimes not removed. The person responsible for installing a sign must ensure they are taken down.

#### **BUS STOP SIGNS**

The glazed Adshel bus shelter design is more successful that the older green shelter because it incorporates a flag for the display of bus service information. The green shelters have white signs crudely attached to the side of the canopy. These signs should be replaced to fit the dimensions of the canopy. Newly installed shelters should feature a pole or bracket that allows the sign flag to be integral to the shelter design and fixed in a position that is clear and legible to bus drivers and waiting passengers.

Left 1: Ugly and obstructive temporary sign. Princes Street Left 2: Crude bus sign. Tombland

#### **KEEP LEFT SIGNS**

Internally illuminated plastic keep left bollards are ugly. Hoop mounting is a much more attractive way of displaying the signs. We will work with the County Council to refine the design of the hoop signs and exploit technical innovations such as luminescent sign coatings and dispensations from the DfT to reduce the lighting requirements.

# NO WAITING AT ANY TIME

The common 'No waiting at any time' plates are no longer required to be displayed in combination with yellow lines. All these redundant time plates will be removed.

#### **CLUTTER BUSTER**

A clutter buster service will be established to remove redundant signs and street furniture.

Left 3: Internally illuminated bollard. St. Peter's Street Left 4: Hoop mounting. Agricultural Hall Plain

# STREETSCAPE COMPONENTS - SIGNS & ROAD MARKINGS



#### SIGN LIGHTING UNITS

Wide lighting units on flimsy brackets currently illuminate a large number of signs. They look crude, waste electricity and create a visually distracting light backwash. We will use neat slim horizontal sign lights.

Above: Overly large lighting unit. London Street

#### **ZEBRA ZIG ZAGS**

Eight zig zag markings are normally used on the approach to zebra crossings to deter parking in the vicinity of the crossing. The option to use as few as two zig zags is available if site constraints, such as a 20 mph limit, the proximity to a junction or other parking restrictions make eight unnecessary or unworkable.



#### LINES

Lining and lettering on the carriageway can be very visually intrusive. We will introduce more Pedestrian Zones, where vellow lines are not required. The Traffic Signs Manual (Ch.5, Para 20.4) allows different widths of yellow line to be used in environmentally sensitive areas and on slower speed roads. We will use 50mm yellow lines. It is particularly important with the thinner line width that the paint is regularly renewed to ensure enforcement is possible.

Above: Yellow lines. Gaol Hill



#### HATCHED MARKINGS

Many carriageway surfaces are painted with visually intrusive hatched markings to direct traffic, often in association with filter lanes. This form of prescriptive traffic direction concentrates the motorists' attention on their manoeuvring in relation to other vehicles on the carriageway rather than their relationship with pedestrians. It is suited to the primary road network, and is rarely necessarv in the citv centre where traffic speeds are slow. pedestrians are present in large numbers and the quality of the environment is high.

Above: Hatched markings and filter lane. Tombland

# STREETSCAPE COMPONENTS - PLANTING





Left: Trees framing an entrance. St Stephens Street

Right: Existing tree close to development. Duke Street

#### PRINCIPLES

Vegetation in the street gives multiple benefits: the sight of joyful colour, cleaning the air, providing shade and shelter and reminding people of the changing seasons. For these reasons trees and flowers are popular with the public. We will plant more trees and establish bolder floral displays. The location, method of planting and species selection is critical if vegetation is to thrive and we are to avoid problems such as blocking lines of sight, creating litter traps or disrupting paving surfaces by root growth. Trees should be pruned when branches grow down to head height.

#### **EXISTING TREES**

Trees should not be perceived narrowly as individual urban decorations, or negatively as a maintenance burden. Rather, they should be treated as an integral component of the streetscape and as a collective asset that greatly contributes to the city's character and landscape setting. As such, the welfare of existing trees will be an important consideration whenever development of the built environment is proposed.

# STREETSCAPE COMPONENTS - PLANTING

#### TREE PLANTING CONDITIONS

Street trees suffer a range of environmental pressures including: compacted soil; lack of rooting space; competition for space below ground from cables and pipes; a lack of moisture, oxygen and nutrients to the roots; trenching damage; competition above ground from traffic, buildings, street lights and road signs; repeated heavy pruning and mechanical damage caused by vehicle impact; high pollution levels from car emissions, road salts, oil and other pollutants and vandalism.

The most significant problem that urban trees face is the scarce quantity of useable soil for root growth. When soils are inadequate, plant growth suffers and trees die prematurely. Tree pits should normally have the following features:

- Pits that are as big as possible but a minimum of 2.5 cubic metres;
- Amsterdam structural tree soil or crate systems to support the pavement and allow freer root growth;
- Specialised geotextile fabric under the pavement that provides a load transfer blanket reducing the vertical loads on tree roots and soil compaction and diffusing any upward pressure from surface roots so the pavement lifts uniformly without posing a trip hazard;
- Root barriers selectively positioned to prevent root spread damaging utilities;
- Trees staked above ground or guyed underground to stabilise them during the early years of growth;
- Timber frames used in areas prone to vandalism;
- Irrigation pipes; and
- Surfaced in smooth granite cubes or conservation setts that are dry-jointed so that air and water can reach the roots and they can be gradually removed as the tree grows.

### STREETSCAPE COMPONENTS - PLANTING





#### **FLOWERS**

Bold floral display in ground level beds is the more natural and preferred approach. In the city centre we will not use plastic troughs and flower towers. Flower displays are better mounted on structures that are already in the street such as lighting columns and buildings to avoid reducing footway width. The new stronger lighting columns along Prince of Wales Road, Castle Meadow, Red Lion Street and St. Stephen's Street are capable of carrying baskets. The bottom of the baskets must be at least 3m from the ground. Sponsorship signs associated with floral displays should be of a size that is in proportion to the scale of display and the distance from which the sign will be viewed. For instance, on roundabouts signs will be no larger than 600mm x 400mm. On pavements the signs will be significantly smaller.

#### OTHER FORMS OF PLANTING

Although shrubs may sometimes act as litter traps and become places of concealment for antisocial activity, there will be occasions when their use is appropriate. For example, they can be useful in directing pedestrian movement, screening undesirable views or providing seasonal interest and colour. Likewise. low ground cover planting can be useful in stabilising steep slopes or awkward corners where greenery would be desirable but grass difficult to maintain. Innovations such as climbing plant supports may also be appropriate where, for instance, there is insufficient space for trees. All forms of planting require suitable provision for successful establishment and regular maintenance.

Above Left 1: Attractive shrubs. Railway Station. Above Left 2: Climbing plant supports. Westlegate.

# STREETSCAPE COMPONENTS - PUBLIC ART



Above: Quayside packing case bollards. Quayside

#### **PUBLIC ART**

Public art can introduce delight and curiosity into the street. It can infuse functional objects like railings or seats with symbolic meaning and beauty, helping to create a sense of place and local identity. We will continue to use public art to reinforce the identity of the city and to celebrate civic pride and achievement. It is vital to make the right judgement over position (which should be prominent but not obstructive). scale (which should reflect the grandeur or intimacy of the surroundings) and materials (which should be robust and easy to maintain). Pieces that incorporate tactile exploration, Brailled information and clear print signs helps more people enjoy them. Public art should only be installed when the responsibility and resources for maintenance are clear.

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For more information visit www.liveable-city.org

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