



Street Materials Guide

Design and Good Practice

January 2012



Introduction

The role of surface treatments and street furniture can and does play a major part in place shaping and the quality of the living environment. The choice of materials currently on the market is impressive and offers a wide ranging palette to the urban designer. From street lighting to permeable surfacing the visual impact of the street scene using these materials can be substantial. They can also transform an existing street by retro-fitting, improving the living experience for residents and adding quality to an area.

For the purposes of this guide the term Street Materials will cover the whole range of materials and fixings from bollards to hard landscaping. Whilst the use of these materials has meant a step change in the quality and feel of the urban setting there are other less immediate but equally important impacts to consider.

Permeable surfaces can play a major role in combating the impact of surface water run off, an increasing area of concern if more extreme weather events start to occur. But such surfacing needs special maintenance treatment if it is to perform at its best. Along with other sustainable drainage measures there may be an additional cost to the local authority in maintaining such surfaces and measures. The same can apply to other street furniture such as street lighting columns. The market offers a wide range of columns and lanterns, but these do get damaged and can be very expensive to replace or sometimes they are no longer available. Therefore maintenance issues will require careful consideration in terms of practical maintainability and affordability so as to minimise future maintenance liabilities and potential risk to the County Council.

The potential benefits of the wide range of materials and street furniture available are recognised and encouraged in Essex, a County at the forefront of quality residential and mixed use development. But issues such as long term maintenance, sustainability and availability need to be considered if that attractive street scene is to last and provide the benefits expected.

So wide is this range that some form of guidance is necessary. This Guide looks at Street Materials and considers issues such as maintenance, replacement and life span. The Guide gives an indication of what will be considered appropriate for adoption and where a commuted sum may be asked for. This does not mean that street materials and furniture that are not in the Guide will not be accepted as this is a developing area for suppliers, and so where there is a wish to use non Guide covered street materials and furniture this will be considered by the highway authority on its merits.

Terms of Reference and Composition of the Street Materials Guide Review Group

The Review Group, formed to look at producing a Street Material Guide, consisted of representatives from various departments within Essex County Council, who reflect a range of related disciplines. The objective of the Group was to:

“Produce an Essex County Council guidance note to look at the type and range of materials that could be used within the adoptable highway on new housing developments and improvement schemes, to take account of and promote the ideals of creating high quality streetscapes and hence more attractive living environments for the people of Essex.”

This has been achieved by:

- a. Reviewing background information and advice
- b. Reviewing current material use and practice
- c. Reviewing supporting technical information
- d. Undertaking site visits to developments and Town Centre improvement schemes
- e. Carrying out a resident survey
- f. Developing a palette of materials to allow creative design:- material types, options and detailing, taking into account maintenance and other factors
- g. Discussion with internal specialists with regard to maintenance, lighting, drainage, conservation and landscaping

The Review Group comprises ECC Officers representing:

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1. PRINCIPLES

1.1 *Essex Character*

One of the aims of this guide is to encourage new development to respect and relate to the character of traditional Essex towns and villages. The materials used in creating new public spaces and streets should also reflect the diverse and varied character of Essex.

This can be achieved through careful consideration of both the surrounding context as well as the historical influences that have helped shape the landscape and the built environment.

The Essex Design Guide gives much detailed guidance on the design of residential and mixed use developments in Essex and places great emphasis on ensuring that new buildings and the public realm so created properly and thoughtfully fits in with the Essex Character and its local context.

1.2 *Context*

The selection and application of street materials and associated street furniture play a key role in determining the context.

Sites will have to fit into a context of pre-existing development, including town and village centres, many of which are conservation areas. These are “areas of special architectural or historical interest the character of which it is desirable to protect or enhance”.

Some sites will be ‘greenfield’, where the context of surrounding development may not be so significant, therefore the choice of street materials should be integral with the design of the new buildings and public spaces.

Depending on the context, the planning authority will have to determine whether a new scheme should perpetuate the format of the surrounding area or establish a new one. In the design and specification of new developments, material choice is more flexible than sites in or around existing historical centres. In these areas local character should be addressed through consideration for:

- Settings of listed and other important buildings
- Conservation areas
- Preservation of local distinctiveness
- Existing historic materials and street furniture

The successful function of space is the measure which largely determines the vitality and health of urban areas and new developments. Whereas planning policy over the last 50 years has had the effect of increasing the separation of functions, our present day objectives for sustainability require us to bring them together. The typical historic town once supported a wide variety of activities within buildings, streets and public spaces and it was these functions that attracted people to live in an urban dwelling rather than in the countryside.

This guide aims to improve the function and appearance of the Essex streetscape by creating vibrant, easy to use spaces and places that direct the focus towards people friendly, liveable and sustainable public realm.

1.3 *Public Realm*

What do we mean by the Public Realm? One useful definition is “the parts of a village, town or city (whether publicly or privately owned) that are available, without charge, for everyone to see, use and enjoy, including streets, squares and parks; all land to which everyone has ready, free and legal access 24 hours a day; also called public domain and public space”. (Ref: The dictionary of urbanism, 2005, Robert Cowan).

The success and popularity of our new and existing communities relies strongly upon the design and quality of this public realm. As well as achieving the technical requirements, the public realm needs to be able to function successfully; and to be attractive, safe and well-maintained.

Achieving this requires a focus of resource and co-ordination: streets, parks and squares and the relationship of buildings to these dictate the overwhelming character and identity of places – in some cases more than the architecture and detailing of the built form.

The best spaces occur when public space is attractive, inviting, safe and well-maintained. Such space makes provision for the complex needs of the residential and business community and provides a satisfactory balance between competing interests. It is important to think of the public realm as one shared environment rather than as separate functional areas. This necessitates a change in the way these spaces are designed and built.



1.4 *Components of the Public Realm*

- Streets (including footways and cycleways) – the space enclosed by the fronts of buildings comprising highway space, meeting space, commercial space, utility and recycling infrastructure, play space and green routes
- Paths – neither streets nor footways; not often incorporated in new designs but can be vital in linking streets, squares and other places
- Squares – visually static spaces suitable for sitting and socialising. Can be trafficked.
- Pocket Parks – small communal spaces within the urban block structure
- Recreation Grounds – usually a legacy of earlier open-space planning; provision made for sport.
- Open Space – for socialising, informal play, nature, landscaping, informal recreation, water management, cultural activities and entertainment
- Parks – formal landscape but possibly with open spaces and sports facilities. Provision for a variety of functions, depending on size
- Waterfront – may host any of the above



The quality of public realm relies on a number of factors including:

- Materials
- Detailing
- Continuity
- Workmanship
- Landscape
- Street trees
- Public art
- Adoption and construction standards
- Maintenance

It is important to recognise that quality can only be achieved by adopting the same co-ordinated approach to design and detailing within the public realm as that required for the design of the enclosing buildings. All public space should be designed to be accessible for all user groups: schemes should not provide segregated provision for less mobile members of the community.

Designing new spaces within a development provides a special opportunity to combine a consideration of these elements with a close attention to detail. The Essex Design Guide offers some advice on how this can be done.

The design of the public realm needs to take into account the specific needs of the location, users and environment where it is located. For example, a mixed-use street allows for parking, servicing and landscaping for those places at the heart of a neighbourhood or a large development where residential, commercial and service uses interface. A play street introduces the possibility of creating very safe and neighbourly spaces that are a step or two away from the main traffic routes within the spatial system and where homes are the principal land use.

1.4.1 **Materials**

As a general rule the quality of the design of public space is more important than the quality of the materials used. A well-designed scheme would not necessarily be compromised by the employment of simple, inexpensive materials but a poor scheme would not be lifted by the use of expensive ones. It is therefore more cost-effective to engage competent design teams for public space than to rely upon the specification of elaborate paving.

Hard landscaping materials need to be aesthetically pleasing, structurally robust, have good weathering characteristics and only require simple maintenance. These materials need to be imaginatively applied to make places attractive, and detailed so that the surfaces are not easily damaged.

It is therefore essential that, within footways, surface materials and their method of laying need to be assessed for their suitability for occasional vehicle traffic and, in most cases, footways will need to be designed to resist axle loads of commercial servicing vehicles (approx. 8200 kg = 1 standard axle). Different surface materials can be used to subdivide large areas of hard surfacing to create different spatial effects and define routes or areas of different use. However, incidental changes in material or colour to identify land ownership or responsibility for maintenance will not normally be acceptable.

Generally, the highest quality materials, such as granite setts and Yorkstone paving, should be reserved for those locations of special significance. For instance, urban or neighbourhood centres, squares and conservation areas which are designed or retro-fitted to attract people in numbers should show off their civic importance through the use of more expensive materials. Elsewhere, a limited and subtle palette of materials, sizes, shades and textures should be used to act as a backdrop to street activity and architecture. The Highway Authority needs to be consulted at an early stage and approve all matters relating to existing and proposed highways, including materials. Commuted sums will be sought for the use of materials that require more costly maintenance.



1.4.2 Detailing

The quality of the public realm can be seriously let down by poor attention to detailing. Where this occurs it is invariably because there has been a failure to apply some of the prerequisites of good design such as working in close collaboration with other design disciplines and utility companies. It can also be down to inadequate on-site supervision of contractors. It is preferable to consider potential aspects of detail as an integral part of public space design which will include:

- Junctions between materials, kerbs and crossings and changes in direction of paving
- Traffic calming features
- Location and orientation of manhole and access covers
- Columns, poles and ground fixings and the design of paving around them
- Integration and pattern of tactile paving
- Tree pits, root barriers and irrigation
- Combining and grouping of signs and street furniture
- Location and design of drainage gullies and grilles, where technically possible
- Design of falls
- Road markings
- Paving texture

Routes for underground utility services and apparatus should be planned early in the design stage in conjunction with all relevant statutory undertakers. Detailed advice on providing for utilities on new developments can be found in National Joint Utilities Group guidance (www.njug.org.uk). Early involvement from Utility companies will help to prevent damage to carriageway and footway construction before the works are adopted

Underground ducting for utilities and services should be incorporated into new highway construction wherever possible especially where non-standard materials are used. Ducting has many long term benefits including reduced maintenance costs and helping to increase the longevity of the highway. Regardless of whether ducting is used or not, all utilities should generally be located either under shared service strips or the footway.

Where legal adoption or ownership boundaries need to be marked on the ground the preferred option is the use of small metal studs. These studs can be of any non-ferrous metal fixed at 1m centres secured firmly flush to the surrounding hard surface.

The maintenance of these boundary indicators will be the responsibility of the developer, landowner or management company. The paving material should preferably be continuous between building or garden front and the road kerb.

The preferred method of introducing tactile paving for the visually impaired in areas of footway is a blistered surface that replicates the surrounding paving material, laying pattern and colour – avoiding random, patchwork footways.

1.4.3 Continuity

It is important that on large development projects brought forward by a number of different developers or in regeneration areas where the entire network is to be upgraded, the design of streets and the choice of materials are consistent and logical across the whole of the area. In these circumstances it is essential for there to be continuity in design and the use of materials. A level of consistency could be achieved by adopting design codes for the public realm developed in conjunction with an area master plan. Special consideration should be given to the transition between a new area of public realm and the existing public space network.

1.4.4 Workmanship

Good workmanship begins with good design and to be effective it must be carried through all stages of a project; that is the specification, detailing, implementation, site supervision and in the maintenance regime. Also, it must be supported by the allocation of adequate resources such as skilled labour, time and funding. The care and commitment of all contractors in achieving the highest standards are essential and will ultimately reduce future construction failures and drive down maintenance costs.

Good workmanship and high construction standards employed at Newhall, Harlow



1.4.5 Landscape

There are distinctive patterns of development and road landscape commonly seen throughout the county.

Old villages, often have a sporadic pattern of vegetation with trees shrubs and hedges relating to the dense built development pattern, neighbouring fields, gardens, churchyards and woodland. Some of the trees may be very old, and many having been planted originally for their timber value. This is illustrated in the Essex Design Guide (p174).

Victorian development often included street tree planting with avenues along roads. This tradition continues along many roads. In the spate of building main roads in the 1920s, avenues of ornamental species were popular along wider roads. In town centres, street trees are common and become an important part of the street scene providing shade, shelter, habitat for wildlife, and improve air quality as well as being important for amenity.

The Essex Design Guide defines a number of layouts of varying densities within a rich landscape setting. Arcadia has a density of 8 houses per hectare, which has a dominant landscape with substantial tree and hedge cover. Boulevard layout with densities up to 13 houses per hectare also has trees used to enclose spaces. Typically it would have avenues with hedges along front property boundaries.

With larger roads, groups of trees, hedges and small woodlands are used to blend the road into the surrounding landscape. Recommended species tend to be native, partly so they complement the landscape character and also so they contribute to nature conservation. Hedges and woodlands are common features in the Essex landscape, and there are many examples of roadside hedges dominated by hawthorn and blackthorn, with a variety of other species included for diversity.



Landscaping at Beaulieu Park Chelmsford

1.4.6 Street Trees

It is widely recognised that trees in towns and within residential development are an important resource which enhances the quality of our urban environment. Expressed most simply, it could be said that trees improve our quality of life.

Other obvious benefits include:

- Noise reduction
- Control of airborne pollutants
- Benefits for wildlife.

It is quite easy to demonstrate that trees have a powerful impact on people's perceptions of the visual quality of streets and urban spaces. Not only do people feel better in a tree-lined environment (whether or not the individual recognises this) but they are prepared to pay more to live in one.

Conversely, deformation of paving, problems caused by fallen leaves and branches, damage to adjacent services and buildings, and safety issues have all been cited at one time or another as a reason not to plant trees. With correct detailing of the planting area, careful choice of species and good management and maintenance, most of these problems can be overcome.



1.4.7 Public Art

The provision of public art can add value to any development in the public realm, enriching the environment by emphasising the particularities of place and providing a focus for cultural and community reference. Public Art is increasingly seen as an essential component of good practice in landscape and urban design. By definition any successful piece of public art is unique and specific to its location.

Public art can take many physical forms. Stand-alone sculpture remains one of the most common and within this category there is a great variety of treatments which can stand up to the elements and conform to structural and health and safety standards. However, the artist can also enhance the visual richness and meaning of a scheme through a contribution to hard and soft landscaping, lighting, street furniture, signage, walls, fences, gateways and other features. In this way the effect may be more subtle and enduring and can often prove very cost effective. In any case, the development of the artwork provides an opportunity to focus community engagement, bring together stakeholders and create positive publicity.

Essex County Council encourages all developers to include the concept of integrating public art within their schemes. The Council itself implements a 'percent for art' policy for its own capital projects and strongly encourages this policy for any development in the county with an area of 0.1 hectares or greater. The current policy is to allocate 1% of the development budget to public art.

Essex County Council has produced a 'Public Art Guide' which outlines the process of commissioning public art. Early recruitment of an artist is good practice and the benefits tend to diminish the later an artist is brought in. The process breaks down into a number of phases.

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- Scoping and identification of budget
- Development of artist's brief
- Recruitment of artist



**'Town to Sea Trail' Colchester
by Andrew Rowe, David Mackie
and Heather Parnell 2007**

- Contracting of artist for design phase
- Approval of designs for compliance with relevant technical standards
- Planning submission (ideally the art will be part of an integrated design)
- Contracting of artist to implement designs
- Implementation as part of construction programme

The Public Art Guide is available in PDF at www.the-edi.co.uk or from the Public Art Team at County Hall, Chelmsford. For further advice and practical assistance contact ECC Public Art Officers.

1.4.8 Adoption and Construction Standards

For a long time the public realm has been regarded as the responsibility of local authorities.

However, this need not be so and there is an increasing number of examples where special arrangements have been made to entrust the care of the urban environment to special-purpose companies, associations and communities. These can have the benefit of being owned or controlled by the users of an area, allowing area management to be more responsive to local expectations.

These arrangements are to be encouraged and within Essex it is no longer assumed that highways will be adopted and public realm maintained by the Highway Authority. However, the Highway Authority will apply the Advance Payments Code for streets where there are more than 5 properties to ensure that formal arrangements are in place for the management and maintenance of the streets. Whatever arrangement is agreed, public access within the public domain must be assured. Gated communities and restricted access to public space must be avoided. See Secured by Design (www.securedbydesign.com).

Adoption, management and maintenance should be discussed with the Highway Authority at an early stage in the design process so that:

- Design specifications for street works can be agreed
- Car parking and commercial vehicle access management arrangements are understood which may necessitate the implementation of a strategy that extends beyond the site itself. Developers will be required to fund any additional controls in the wider environment that are thought to be necessary as a consequence of the development.

- Construction standards would need to conform to those required for adoption (see Essex County Councils “Development Construction Manual” – online at www.essex.gov.uk.) even if it were decided to dedicate the street as a public highway without adopting it for maintenance purposes. In this case it would have the status of a private street and an advanced payment code would be required or an exemption applied for.

If the Highway Authority wished to adopt a Play Street it is likely that the adopted area would coincide with the vehicle running lane only, leaving elements within the street which are the maintenance responsibility of another organisation or company. The demarcation of responsibility should be clearly and legally defined and any demarcation on the ground should be through the use of metal studs.



1.4.9 Maintenance

The initial appearance of a well designed street can be strikingly appealing to the public visiting for the first time. However, if the design and construction fail to properly consider the practical issues of future maintenance, service provision and reinstatement then this attractiveness can soon be lost.

The Highway Authority generally expects a material to have a life expectancy of at least 25 years before major repair or replacement becomes necessary, yet many surface treatments may only be guaranteed by the manufacturer for 8 to 10 years, sometimes less. In normal estate roads this is not cost effective and leaves a long term maintenance liability for the adopting authority. When special materials, considered essential to a scheme, require enhanced maintenance then a commuted sum may be necessary to cover the increased costs (see 1.6).

A vast array of materials is available but it is important to ensure the long term availability of the material used. If a type or colour of block or slab is no longer manufactured then the closest match will be found but patches of alternative paving over a large area can look unsightly. While it may be possible to stockpile special materials, such storage facility is expensive and increasingly unsustainable, and should therefore be avoided.

To make certain a match can be made when repairing a surface it is important to have detailed 'as built' records giving information on the specification of the material, size, colour, manufacturer etc. This information should be included in the CDM Health and Safety File at completion or adoption of the scheme and provided to the County Council, who will distribute the information to maintenance and the NRSWA team that liaises with the utility companies.

When designing an area it should be borne in mind that the majority of cleaning is carried out by mechanical sweepers of varying sizes. Poorly thought out and located street furniture can block a footway and prevent access for the machine. This is especially relevant when considering repair of street lights.

Whilst Utility Companies are obliged to make every effort to reinstate any repairs with the identical surfacing material, this is not mandatory and alternative materials are often used if the required surface material is not readily available. It is important that inspection of reinstatements is carried out and the correct materials pursued.



Poor reinstatement of block surface

1.5 Sustainable Drainage Systems (SuDS)

Following the devastating floods in England during the summer of 2007, the Government has introduced The Flood and Water Management Act to provide for the first time, one body (ECC) accountable for the delivery of coordinated local flood risk management in Essex and thereby minimise the risk of flooding from ordinary watercourses, surface runoff and groundwater.

The Flood and Water Management Act has implications for the design, approval, construction and maintenance of Surface Water Systems and Sustainable Drainage Systems (SuDS), and affects all new developments. The Bill will require developers to include sustainable drainage, where practicable, in all new developments, built to forthcoming National Standards (covering design, construction, operation and maintenance) which reduce the risk of flooding and flood damage and help improve water quality.

The concept of SuDS is a design philosophy incorporating a structured range of techniques for surface water management to mimic the natural drainage pattern. The objective is to reduce the impact on watercourses and also to deal with surface water run off as near to the source as practicable.

Drainage systems can be developed in line with the ideals of sustainable development, by balancing the different issues that should be influencing the design. Surface water drainage methods that take account of quantity, quality and amenity issues are collectively referred to as Sustainable Drainage Systems (SuDS). These systems are more sustainable than conventional drainage methods because they:

- Manage run-off flow rates, reducing the impact of flooding on urbanisation
- Protect or enhance water quality
- Are sympathetic to the environmental setting and the needs of the local community
- Provide a habitat for wildlife in urban watercourses
- Encourage natural groundwater recharge (where appropriate).

They do this by:

- Dealing with run-off close to where the rain falls
- Managing potential pollution at its source now and in the future
- Protecting water resources from point pollution (such as accidental spills) and diffuse sources.

They may also allow new development in areas where existing sewerage systems are close to full capacity, thereby enabling development within existing urban areas. Urban drainage is moving away from the conventional thinking of designing for flooding to balancing the impact of urban drainage on flood control, quality management and amenity.

SuDS are made up of one or more structures built to manage surface water runoff. They are used in conjunction with good management of the site, to prevent flooding and pollution. There are five general methods of control:

- Attenuation, storage and flow restriction
- Filter drains/strips and swales
- Permeable surfaces
- Infiltration devices
- Basins and ponds

These controls should be located as close as possible to where the rainwater falls, providing attenuation for the runoff. They also provide varying degrees of treatment for surface water, using the natural processes of sedimentation, filtration, absorption and biological degradation.

SuDS can be designed to function in most urban settings, from hard-surfaced areas to soft landscaped features. The variety of design options available allows designers and planners to consider local land use, land take, future management and the needs of local people when undertaking the drainage design, going beyond simple drainage and flood control.

Some SuDS options could require significant land take so it is essential that they are considered early on in the design process. SuDS solutions are also available for high density urban environments where space is limited.



1.6 *Commuted Sums for Maintenance*

Recent Government guidance and initiatives have promoted innovative design and the use of enhanced materials and products to deliver a high quality public realm. These enhancements undoubtedly increase the desirability to live on such developments, and also have a positive effect on developer's sales opportunities.

However, the associated cost of maintaining the highway infrastructure places an ever increasing financial burden on the highway authority. Where these costs relate to the maintenance of enhanced materials, products and other infrastructure which are at variance to the standard items then the County Council will seek a financial contribution from developers (commuted sum) to offset the additional maintenance costs involved.

Applicable items include:

- Materials with increased maintenance costs over normal specification
- Street furniture (not required for road safety purposes)
- Additional or enhanced lighting
- Street trees and their associated tree pits
- Bus shelters and equipment
- SuDS features such as soakaways, storage facilities, swales, permeable paving etc
- Non highway assets such as public art
- Special features such as noise fencing and traffic signals
- Specialist or non-standard equipment
- Any culvert, bridge, retaining wall or highway structure

The actual commuted sums payable will be determined and agreed for each individual development and will be based upon the County Council's standard schedule of costs. It is anticipated that provision will be made within the appropriate Highways Agreement (e.g. Section 38, Section 278 of the Highways Act) to secure commuted sum payments together with an Informative being included on the planning permission.

2. MATERIALS GUIDANCE

2.1 Principles

The materials chosen whether for a new estate or an improvement scheme should enhance the Public Realm and complement the existing area.

When considering the appropriate materials for the character of the location, choose a range of complementary materials. However, they should be:-

- Safe
- Easy to maintain
- Readily available
- Durable and fit for purpose
- Long term cost viable
- Locally sourced products where possible

Consideration should also be given to environmentally sustainable and recycled/recyclable materials including those utilising recycled aggregate.

The following are the standard materials acceptable for adoptable areas within the Public Realm. For more technical guidance on the use of materials, reference should be made to Essex County Council's Development Construction Manual (available on the Council's website: www.essex.gov.uk).

Where non-standard materials that are not detailed in this Guide are proposed full details must be submitted to, and approved with the Highway Authority in order to appraise their suitability, performance and cost effectiveness.

2.2 Carriageway Surfacing

2.2.1 Road Types 1, 2 & 3 (as defined in the Essex Design Guide)

For durability and ease of maintenance the carriageway of these major road categories should be of flexible construction only, with the exception of traffic calming features and adoptable (unallocated) parking areas. Appropriate materials are:

- Hot Rolled Asphalt (HRA) with pre coated chippings as specified in BS EN 13198-4.
- Thin coat surfacing such as Stone Mastic Asphalt (SMA) to comply with Clause 942 of the Specification for Highways Works Volume 1.
- Asphalt concrete such as Close Graded Macadam (CGM) as specified in BS EN 13108-1.

PSV to suit road use and agreed with the Highway Authority.

These materials are predominantly black however other colours may be acceptable to complement the location. Coloured precoated chippings may also be considered.



Type 3 feeder road at Great Notley Garden Village

2.2.2 Road Type 4, (as defined in the Essex Design Guide)

All of the finishes used for Road Types 1, 2, and 3 may be used for Type 4 but additionally concrete blocks may be specified and resin bound gravel in small areas such as traffic calming measures, where agreed with the Highway Authority.

This category of road will generally require a special surface finish with a minimum Polished Stone Value of 50 (See DMRB HD 36/06). A lower Polished Stone Value (PSV) is suggested because of low speeds and to widen the scope of acceptable materials.



Concrete blocks, normally 100mm x 200mm x 80mm usually laid in a herring bone pattern for strength are acceptable. Colour to be agreed, with a minimum PSV to suit road use and agreed with the Highway Authority.

In order to avoid future maintenance problems, it is essential for blockwork and the underlying road construction to be robust and conform to the Essex County Council's Development Construction Manual.



Tumbled blocks are generally but not exclusively to be one gauge and preferably 160mm wide, 80mm thick. Colour to be agreed with a minimum PSV to suit road use.

2.2.3 Road Types 5, 6, 7 & 8 (Shared Surface Roads as defined in the Essex Design Guide)

Shared surfaces may use any of the materials described above but in addition may include clay paviors by prior agreement with the highway authority. Without the delineation of traditional kerblines there is much more scope for considering the geometric pattern and combination of materials to relate to the whole space between buildings or emphasis specific areas such as junctions. However edging details and linear details, such as a central channel or flush kerbline in a different material, colour or size, should be used to divide large areas of the same material.



Shared surface at Newhall Harlow using natural bound gravel with granite setts



Shared surface at Beaulieu Park, Chelmsford using block paving and granite kerbs

2.2.4 Mixed Use Streets (as defined in the Essex Design Guide and the Urban Place Supplement)

As these urban streets will be heavily trafficked and used by service vehicles and buses, materials need to be capable of withstanding loads over 7.5t, be durable and be quickly and easily maintained. It is therefore likely that the most suitable material for the carriageways will be asphalt as for road types 1, 2 and 3. In new development the lanes should be separated by a 0.5m wide textured central reservation constructed using for example 100 x100 x 200mm deep granite setts level with the road surface which can be overrun. A matching textured edge should be used along the margins and to separate the carriageway from parking bays. Tables of granite setts or similar small textured blocks can be used along the length of the street and at junctions with minor roads to slow traffic and provide level pedestrian crossing points where raised kerbs are in use. If kerbs are minimal or level surfaces are used, flush areas of granite setts can be used in the same way.



Shared surface off Brentwood High Street

In the refurbishment of existing mixed use streets changes in surface materials can be used to influence driver behaviour and slow traffic. The concept of shared space streets where pedestrians and traffic mix in a less regulated way relies on less distinction between pedestrian and vehicle surfaces.

On-street parallel parking bays should preferably be of a different material to the carriageways, for example concrete paviors. The choice of surface materials for the carriageways, parking bays and footways should be chosen to complement each other from a limited subtle colour palette which can provide a background for street trees and furniture.

2.2.5 Other Mixed Use Areas and Public Spaces such as Squares, Junctions and Pedestrianised Areas.

A mixture of the above materials may be used for roads and footways but with coordinated colours and textures. Consideration may be given to Yorkstone, granite and other natural stone for footways.



Shared surface in Brentwood using tumbled blocks with the carriageway marked by a different colour banding



Brentwood High Street using reconstituted granite paving



Clay paviors used in the enhancement to South Woodham Ferrers Shopping Centre

It is important that surface materials should be technically suitable for any required vehicular usage but also that the choice of surface materials is appropriate to the sense of place and coordinated with the overall design approach to the landscaping of the space. Reference should be taken from the surrounding buildings and their enclosure of the space to choose materials appropriate in module, colour and texture to the context and the scale.

2.2.6 Play Streets

Play streets are designed with play as the principle function of the street, of which vehicles can travel through at slow speeds. Play streets are likely to use a combination of surface materials to reflect the multiple functions of the street without specifically marking out the vehicle path, to visually zone the street from those adjoining and to discourage vehicles from passing closer than 1.0m to buildings which front directly onto it. They also need to encourage very slow traffic speeds and enhance the domestic scale of the public realm.



Play street in Germany with a shared surface. Asphalt surface combined with small blocks to provide a more domestic scale

2.2.7 Conservation Areas

Surface materials in Conservation Areas should be appropriate to the context which should be assessed beforehand, reference being made to the Conservation Area Appraisal and Management Plan, where available and consultation taking place with the local Conservation Officer and planning authority. It is important that the character of a Conservation Area is preserved and enhanced by the use of materials and street furniture which are compatible with the historical setting and will usually entail the use of a palette of natural materials. The layout of surface materials should address Landmark Buildings, those which are listed or locally listed, as well as historical features and spaces.

Further guidance on design in historic areas is available in 'Streets for All – East of England' published by English Heritage 2005. Its key principles are to reduce street clutter, promote coordinated design and to reinforce local distinctiveness through careful selection of materials and detailing. General principles to be followed in the historic environment are:



- retain the historic form of streets by maintaining kerblines.
- maintain and restore historic paving where it survives, exposing it in appropriate locations and seeking expert conservation advice before carrying out repairs
- respect local designs and details
- invest in quality and simplicity

Left: Surface materials address an historical feature in the street scene Brentwood, Essex

2.2.8 Porous/ Permeable Surfaces

Whilst permeable paving is now a recognised and established form of SuDS (Sustainable Drainage Systems) having the same structural ability as conventional concrete block paving suitable for pedestrian and trafficked areas, any proposed use of permeable paving must be discussed and agreed with the highway authority at an early stage.

However the correct construction detail is vital and is dependent on the existing substructure as to where total infiltration, partial infiltration or attenuation is appropriate.

For further information on SuDS and permeable surfaces see the Essex County Council Sustainable Drainage Systems - Design & Adoption Guide.



Permeable paving as used here on a new footway around an existing tree in Maldon.

2.3 Kerbs

2.3.1 Road Types 1, 2 & 3



On the higher Type 1, 2 & 3 categories of road only precast concrete kerbs may be used unless agreed with the highway authority.



On a bus route raised level bus stop kerbs must to be incorporated to create a level entry platform using concrete or granite as appropriate.



Other roads may use precast concrete kerbs, silver grey exposed aggregate (conservation) concrete kerbs or silver grey (flamed) dressed granite. Stone or reconstituted stone conservation kerbs should be used in conservation areas.

Only purpose made kerbs are to be used for radii for 12m or less and comply with BS EN 1340 for precast concrete.

2.3.2 Road Types 4, 5, 6, 7 & 8.

Consideration will be given to the use of paving/granite setts to provide a retaining edge for carriageway construction (as shown in the Essex Design Guide) in respect of road types 4, 5, 6, 7 and 8. Kerbs using recycled material or light weight kerbs (e.g. plastic) may also be considered where appropriate, but not in Conservation Areas.

Alternative kerbing:-



These roads may also include concrete paving kerb setts to match the carriageway surface or to provide a contrast.

2.4 Footways/ Cycle Tracks

2.4.1 Footways & Cycle Tracks adjacent to Carriageways

Where footways/cycle tracks are liable to vehicle over-run materials are to be restricted to:-

- Asphalt concrete (DBM) unless there is a need to match existing paths surfaced with Hot Rolled Asphalt (HRA). This material gives a “softer” appearance and repairs are easier to achieve.
- Resin bound material - colour to be agreed and Highways Authorities Product Approval Scheme (HAPAS) certified with a minimum design life of 25 years.
- Where appropriate, concrete block paving, including tumbled blocks, 100mm x 200mm x 80mm - colour to be agreed (for footways only).
- Other materials will be considered on their merits and according to context e.g. Conservation Areas. In mixed use streets, higher quality materials can be used such as granite or York stone where agreed with the highway authority.



Careful consideration should be given to vehicular crossing points and only suitable materials should be used. Otherwise damage by vehicles may occur.

2.4.2 Independent Footpaths

Where there is an assurance that the footway will not be over run or otherwise damaged by vehicles the following paving may be used in addition to that noted above. Cycle tracks however should conform to the more robust specification noted in 2.4.1 above.

- 400mm x 400mm x 65mm standard concrete paving slabs colour to be agreed
- 400mm x 400mm x 65mm textured concrete paving slabs colour to be agreed.
- Riven paving is not acceptable.

2.5 Details

2.5.1 Accommodating Services

Manhole and inspection covers give access to underground services and usually remain the property of the utility company.

Where access to services is likely to be necessary, surface materials that are easily matched and relaid should be used. Utility companies should be encouraged to provide their inspection covers aligned parallel to the kerb. Where alignment is not possible, round covers may be considered, although not if located within areas of block paving.

The use of small, individual access boxes (e.g. stop cocks) should be avoided and instead be combined wherever possible

To avoid unsightly disruption of a paved area, inset or infill covers should be used to create a continual paved surface, coordinated and aligned with the paving pattern and bond. Inset inspection covers must be marked to identify the relevant utility company.

Infill covers with matching materials to be used where ever possible.



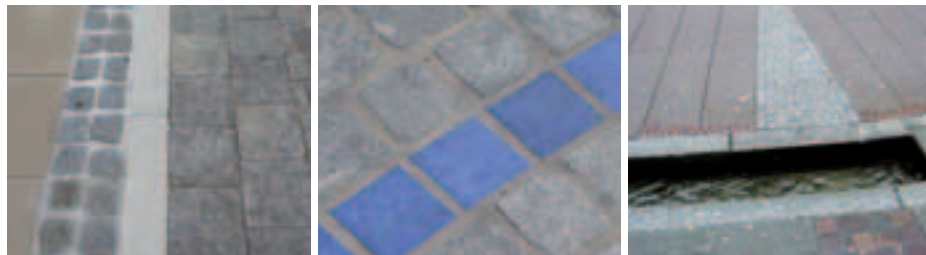
Paving pattern and bond aligned



Cover should have been aligned with paving pattern or maybe a round cover used

2.5.2 Edge Detailing & Separation between Materials

Generally the junction between different materials is best accommodated by a separating detail either in the same material as the main surface but in different size, texture or colour block, or by using a different complementary material.



Natural granite or proprietary setts are generally 100mm x 100mm x 200mm deep and can either match or contrast with paving blocks. Other innovative materials may be used to create a feature, such as recycled glass as centre photo above.

2.5.3 Signs

The application and installation of new signs requires a common sense approach. Guidance for new signs should be interpreted having due regard for the specific site location rather than purely a desktop interpretation of national guidance, however this must be balanced against the ability to enforce. This applies to both vehicular traffic and controlled parking signs as well as pedestrian and cycle route signage.

Where possible and subject to the agreement of the highway authority, existing posts, street lighting columns (if the column is suitable) and buildings may be used to accommodate small signs, helping to reduce street clutter and cost while improving the negative visual impact numerous sign posts can have on the streetscape. Buildings can provide opportunities for fixing signs, with the permission of the owners. Legal agreements will be required to allow for this, including maintenance and access.

A proliferation of signs, posts, and guardrail is visually unattractive and impedes movement.



Cycle and pedestrian signs need to be coordinated to avoid excessive signage, encourage simplified wayfinding and to harmonise with any existing styles.

Within Conservation Areas, sign columns, sign backs, brackets and clamps must be finished in black.

All signs and line markings should generally be in accordance with the current edition of the Traffic Signs Regulations and General Directions.



Above: This sign could have been attached to the bollard

Right: A speed sign fixed to an appropriate column



Further information on signing and lining can be found in the County Council's Signing Policy available on the ECC website

2.5.4 Line Marking

Line markings should be kept to the minimum necessary, with narrower 50mm wide lines used in Conservation Areas and other sensitive public spaces. Where parking restrictions are required, consideration should be given to using Primrose Yellow coloured marking, however, parking zones and discrete signage are the preferred approach.

A cycleway can be defined on the ground by the usual lining or by more innovative ways.



2.5.5 Demarcation of Car Parking Spaces

Generally line marking of parking spaces should be avoided within the public realm in preference of demarcation by subtle changes in material or colour within the surface material.



Left: Shared surface street using block paving with parking space defined using a different size and colour block. Upton, Northamptonshire



Above: Parking spaces defined in bound gravel by the use of granite setts. Harlow, Essex



Example of a designed approach to line marking related to the surface material used



Example of poor use of white lines imposed on a parking space already defined by using different block sizes

2.5.6 Traffic Calming & Tables

Speed restraint measures should be used throughout 20mph zone networks. These can be changes in horizontal alignment e.g. bends, narrows, chicanes and islands, or changes in vertical alignment e.g. humps, cushions, speed tables and table junctions (except on bus routes), or complementary measures e.g. surface materials, buildings, width and alignment, trees and bollards. See also Essex Design Guide pages 142-151.

Blockwork used in Tables and traffic calming features is vulnerable to damage and displacement and therefore more robust construction will be required.



2.5.7 Tactile Paving

Tactile paving should be provided in accordance with Disability Unit Circular DU1/91 and current Essex County Council policy. Generally flat top blister tactile paving should only be used at crossing points on roads Type 3 and higher categories (red for controlled crossings, otherwise buff) unless agreed with the highway authority.





Footways/cycle tracks will not normally be segregated but where they are, appropriate tactile paving must be applied.



Corduroy warning paving coloured natural or buff will be used at a junction of a footway with a cycle track or where steps are unavoidable and similar potential conflict areas.

2.6 Street Lighting

The provision, design and installation of street lighting shall be in accordance with Essex County Council's Adoption Policy, Lighting Policy and Operational Plan document, and shall be agreed by the Street Lighting Manager or Lighting Engineer prior to installation.

2.6.1 Street Lighting Design

In accordance with the current Essex County Council street lighting policy, lighting on local roads shall only be provided if requested "by the district/borough council or by the highway authority". If not already requested, the highway authority shall only require lighting to be installed when one or more of the following criteria are met:

- Main spine roads and bus routes
- Conflict areas as detailed in BS 5489:2003 and BS EN 13201
- Where traffic calming measures shall be installed
- Where lighting has been previously agreed as part of a Section 38 agreement
- With the specific approval of Essex County Council at locations where footpaths, cycleways, including subways, form part of a strategic route.
- Where required by regulation

Where streets are to be lit, lighting should be planned as an integral part of the design of the street layout. Consideration must be given to the location of street lighting units in the proximity of buildings and trees/landscaping.

2.6.2 Luminaires

For new developments, luminaires shall be used after approval from the Street Lighting Manager or Lighting Engineer from either, CU Phosco, Philips, Thorn, Urbis or WRTL (these are in no particular order). Where developers wish to enhance their proposed developments utilising street lighting luminaires that do not conform to Essex County Council Standard Specifications for functional luminaires, a “Selected List of Luminaires” has been compiled detailing alternative luminaires that may be used and is available in the current edition of Essex County Council’s “Specification for the



Adoption of Street Lighting Furniture”. The additional cost of maintenance, replacement and energy costs shall be included in the commuted sum charged to the applicant.

Co-ordinated lamps may be fitted to appropriate buildings (subject to highway authority approval) but access/ maintenance details must be agreed with the owner.

Where appropriate, the County Council will consider the use of technically innovative lighting solutions such as LED modules.

2.6.3 Columns

All lighting columns, beacon and sign posts shall be purchased from manufacturers who are registered with and certified by either British Standards Institute Quality Assurance Services or Lloyds Register Quality Assurance Ltd for the manufacture supply and verification of lighting columns and sign posts under their Quality Assurance schedule to BS 5750 Part 2 ISO 0991.

Lighting columns and sign posts shall generally be hot dip galvanised on all surfaces in accordance with the Specification for Highway Works, Section 19/1 and BS EN ISO 1461. In addition, the roots must be treated with glass flake root coating. The painting of the lighting columns and the use of embellishment kits shall only be permitted (e.g. Conservation Areas) if approved by the Street Lighting Manager or Lighting Engineer.

The additional cost of painting the lighting columns every 5 years shall be included in the commuted sum charged to the applicant.

All lighting columns and sign posts shall accord with Essex County Council BS EN40 requirements. Where lighting columns or sign posts are to be installed on principal roads, they shall also conform to BD26/99, issued by the Department of Transport.

No tolerance shall be given to the manufacturer's dimensions for planting depths for lighting columns and sign posts.

Two standard lighting columns (Coastal and Inland) have been designed by the following, for the various mounting heights that shall be used in Essex: Corus, Stainton, CU Phosco and Fabrikat (these are in no particular order).



Lamps and columns can complement buildings

2.6.4 Conservation & Sensitive Areas

Lighting shall be in a sensitive manner retaining and enhancing the characteristics of the area. This shall be discussed with the local authority planning department and their Conservation Officer.

Where possible, luminaries shall be the same or similar to the existing units or match the style, type and period of the buildings and area but in accordance with the requirements of Essex County Council Lighting Policy and Operational Plan.

2.7 Landscaping

2.7.1 Tree Species

There are many tree species which are suitable for growing as avenue or street trees in or close to paved areas. They are chosen due to a lack of problems with roots, shedding of branches and tolerance to a roadside location. Some specialist nurseries will even prune and shape whilst in the nursery to produce a high-crowned tree to help avoid damage from passing vehicles.

If given forewarning they can also provide specimens which are very consistent in shape and size so uniformity can be achieved when planting avenues. The uniformity can create an impressive avenue and give significance to the approaching town or building. Where a road has a more meandering alignment and is of lesser importance, a range of irregular species could be used.

It is important that the chosen tree species are appropriate to the intended location and this includes consideration of their flower/fruit, ultimate dimensions, water demand, structure and root morphology.

Lists of recommended plant species are given in Appendix C of the Essex Design Guide and may include:-

2.7.2 Avenue & Street Tree Planting

Liquidambar Styracifula	(Sweet Gum)
Platanus x hispanica	(London Plane)
Quercus palustris	(Pin Oak)
Tilia species	(Lime)
Castanea sativa	(Sweet Chestnut)
Carpinus betulus	(Hornbeam)
Ginkgo biloba	(Maidenhair tree)

Small trees suitable for narrower streets include:-

Corylus colurna	(Turkish Hazel)
Crataegus prunifolia	(Cockspur Thorn)
Fraxinus ornus	(Manna Ash)
Malus tschonoskii or Malus trilobata	(Ornamental Apple)
Pyrus chanticleer	(Ornamental Pear)
Sorbus asplenifolia	(Whitebeam)
Acer campestre	(Field Maple)



Existing worthy trees should be incorporated into the street design

2.7.3 Tree Pits

A properly installed root barrier will be required and should be fitted to the sides of tree pits.

Consideration must be given to the installation of 'structural root zone products' such as 'Silva Cell' and 'RootCell' as developed by Geosynthetics and Greenleaf respectively. Such products may be integrated with local storm water management systems.

Where trees are not planted in a grass verge or shrub bed, there are two options for the surface of the planting pit - decorative grille (metal or plastic polymer) or a porous aggregate.



Examples of trees located within the public realm

2.8 Street Furniture

2.8.1 Pedestrian Guardrails

The main purpose of guard railing is to guide pedestrians to suitable crossing points, but there is a tendency to over use it. Where this occurs the railing only serves as an obstacle for pedestrian movement, leading to movements outside the area the railing was intended to protect.

Recent thinking behind the use of guard railing has questioned the over use of railing and the negative effects it has on pedestrian movement. New crossings should respect and be designed around pedestrian desire lines, which should eliminate the need for pedestrian guard rails. Where street conditions have changed or been altered, and subject to addressing safety concerns, opportunities for guardrail removal may exist.



Westminster Council/ Photographer: Matt Cheetham

Example of a recent innovative remodelling of a main junction at Oxford Circus, involving guard rail removal and free flow pedestrian movements



Royal Borough of Kensington and Chelsea

Refurbishment of Kensington High Street London showing the removal of guardrails, de-cluttering of the public realm and a coordinated approach to signage and street furniture

2.8.2 Cycle Parking

Cycling is a carbon-neutral means of transportation and a good form of exercise. Increasing the use of cycles can reduce traffic congestion and pollution and all developments must be designed to encourage cycle ownership and use.

To do this, new developments should consider the needs of cyclists in regard to:

- cycle parking facilities at destinations
- routes between destinations
- cycle storage that is safe, secure, covered and close to home.

There should be sufficient places to leave a cycle at popular destinations both within new development and within the surroundings. The adopted Vehicle Parking Standards for Essex specifies the minimum provision required for cycle storage and visitor parking.

Streets should incorporate suitable short stay cycle parking located close to building entrances.



Within a mixed-use street it is preferable for stands to be sited in small clusters along its length, on each side of the thoroughfare where possible.

Within residential streets, cycle stands could be incorporated into the design, possibly acting as traffic calming features or sited to protect other street furniture.



2.8.3 Bus Stop Infrastructure

Bus stops are the gateway to the bus network and high quality, fit for purpose infrastructure with a consistent, easily recognisable image helps to attract and retain passengers and contributes to an attractive public realm. To achieve this and optimise whole life costs, Essex County Council has implemented a standard range of products and designs which have been selected through a competitive tender process. Contact should be made with Essex County Council's Passenger Transport team for information on the current product range, approvals and agreement for any deviation.

A bus stop flag with timetable case must be provided at all bus stops: where appropriate the flag can be attached to other street furniture to minimise clutter, otherwise it must be fitted to a proprietary bus stop pole. Bus stop poles, flags and timetable cases must be from the current range.

Bus shelters should be selected to tie in with the surrounding architecture and streetscape. In urban areas, metal framed shelters, in black to RAL 9005, with a low barrelled or vaulted roof are generally most appropriate. In rural areas, wooden shelters may be more suitable. Wherever possible, shelters should be fitted with end panels to provide protection from the weather with a clear view panel on the bus approach side.

All bus shelters should be pre-wired for lighting and for real-time passenger information. Real time information should allow for future retrofitting even if lighting or real time information signs are not fitted when the shelter is initially installed. Where shelters are fitted with lighting this should preferably be solar powered.

Bus shelters should be fitted with bench seating with arm rests, although perch seating may be installed if space is limited. All bus shelters should be fitted with plates showing the bus stop name on the kerb face and at both ends of the Essex County Council corporate font (Meta Bold Roman) and should have an information board installed.



2.8.4 Seating

Carefully designed and placed seating within the public realm, enhances street life and provides a resting point for people. Seating helps create and focus activity, develop the use of space and provide opportunities for rest and socialising.



Seating in public areas should be positioned to flank, but not obstruct pedestrian movement. It should be of robust design and construction and resistant to vandalism.

2.8.5 Litter/Refuse Bins

In busy mixed use areas, litter/ refuse/recycling bins can help reduce litter build up and promote social responsibility. They should wherever possible be co-ordinated with other street furniture.

Litter bins may also incorporate cigarette end disposal and drinks can recyclable storage. Bins should also be located in close proximity to school accesses, bus stops, play spaces and seating areas. Care should be taken so that they do not impede the passage of the blind or partially sighted.



Courtesy of Furnitubes

2.8.6 Bollards

Bollards should be used sparingly and long lines, for example to deter verge parking, should be avoided. The choice of the design and material used should be appropriate to the street context and be compatible with other street furniture. In Conservation Areas it may be appropriate to reproduce existing historic designs.



Above: Bollards define crossing points in High Street, Colchester



2.8.7 Street Name Plates

Street name plates shall satisfy the Department for Transport Circular Roads 3/93 and their specification and location shall be to the approval of the Borough or District Council.

The location of name plates should be sympathetic to the street context and be compatible with other street furniture. They can be mounted on walls or buildings as long as suitable agreement is obtained from the owner. In Conservation Areas, consideration should be given to matching existing historic designs.

In cul-de-sacs, street nameplates shall incorporate the “No Through Road” sign.



3.0 Appendices

3.1 Summary of Street Materials

TYPE OF ROAD	CARRIAGEWAY	FOOTWAYS/ FOOTPATHS & CYCLE TRACKS	KERBS	LIGHTING
Road Types 1-3	Hot Rolled Asphalt (HRA) with pre coated chippings to BS EN 13198-4. Thin coat surfacing e.g. Stone Mastic Asphalt (SMA) to Clause 942 of the Specification for Highways Works Volume 1. Asphalt concrete e.g. Close Graded Macadam (CGM) to BS EN 13108-1. PSV to suit road use. Colours and texture to complement footway surface.	Asphalt concrete (DBM) unless matching existing paths surfaced with Hot Rolled Asphalt (HRA). Resin bound material - colour to be agreed and Highways Authorities Product Approval Scheme (HAPAS) certified with a minimum design life of 25 years. Where appropriate, concrete block paving, including tumbled blocks, 100mm x 200mm x 80mm - colour to be agreed (for footways only). Independent Footpaths:- 400mm x 400mm x 65mm standard or textured concrete paving slabs, colour to be agreed.	Precast concrete kerbs unless agreed with the highway authority. Combined kerb and drainage systems where appropriate and agreed. Raised bus stop kerbs. As for Road Types 1-3 and additionally concrete paving kerb sets or granite sets by prior agreement. Recycled material or light weight kerbs (e.g. plastic) may also be considered. Combined kerb and drainage systems where appropriate.	Luminaires - CU Phosco, Phillips, Thom, Urbis or WRTL. Where developers wish to enhance their proposed developments a "Selected List of Luminaires" has been compiled. Lighting columns - Corus, Stainton, CU Phosco or Fabrikat. Columns and sign posts shall generally be hot dip galvanised on all surfaces in accordance with the Specification for Highway Works, Section 19/1 and BS EN ISO 1461. In addition, the roots must be treated with glass flake root coating. The painting of the lighting column and the use of embellishment kits require prior approval. All lighting columns and sign posts shall accord with ECC BS EN40 requirements. Lighting columns or sign posts on principal roads shall conform to BD26/99, issued by the Department for Transport.
Road Type 4	As for Road Types 1, 2, and 3 and additionally concrete blocks and resin bound gravel (in small areas). Colours and texture to complement footway surface			

TYPE OF ROAD	CARRIAGEWAY	FOOTWAYS/ FOOTPATHS & CYCLE TRACKS	KERBS	LIGHTING
Road Types 5, 6, 7 & 8 and Shared Streets	As for Road Types 1, 2, 3 and 4 and additionally clay paviers by prior agreement.	As above	Precast concrete kerbs, concrete paving kerb setts or granite setts. Recycled material or light weight kerbs (e.g. plastic) may also be considered.	As above
Mixed Use Streets	As for Road Types 1, 2, and 3 Subtle delineation of pedestrian, vehicular areas and parking may be required.	N/A	As for Road Types 1 to 8.	
Other Mixed Use Areas and Public Spaces such as Squares, Junctions and Pedestrianised Areas.	As for Road Types 1 to 8 above but with coordinated colours and textures, subtle delineation of pedestrian, vehicular areas and parking may be required.	N/A	As for Road Types 5, 6, 7 & 8	
Play Streets	Play streets are likely to use a combination of surface materials to reflect the multiple functions of the street without specifically marking out the vehicle path.	N/A	As for Road Types 5, 6, 7 & 8	

TYPE OF ROAD	CARRIAGEWAY	FOOTWAYS/ FOOTPATHS & CYCLE TRACKS	KERBS	LIGHTING
Conservation Areas	As for Road Types 1-8 above but surface materials should be appropriate to the context. Reference should be made to the Conservation Area Appraisal and Management Plan, if available.	As for Road Types 1 to 8 plus: Clay Blocks Yorkstone Granite	Stone/reconstituted stone or Conservation Kerbs.	Where possible, luminaires shall be the same or similar to the existing units or match the style, type and period of the buildings and area but in accordance with the requirements of Essex County Council Lighting Policy and Operational Plan.

3.2 *Reference Documents*

Essex Design Guide October 2005 – Essex County Council

Urban Place Supplement March 2007 – Essex County Council

Parking Standards: Design and Good Practice September 2009 – Essex County Council

Secured By Design New Homes 2010 – Association of Chief Police Officers (ACPO) – December 2009

The Dictionary of Urbanism 2005 – Robert Cowan

Public Art Guide January 2008 – Essex County Council

Development Construction Manual – Essex County Council

Flood and Water Management Act 2010

Design Manual for Roads & Bridges Volume 7 – Pavement Design and Maintenance, Section 5, Part 1 HD 36/06: Surfacing Materials for New & Maintenance Construction – The Stationery Office

Streets for All: East of England 2005 – English Heritage.

Traffic Signs and General Directions Regulations 2002 – The Stationery Office

Lighting Policy and Operational Plan – Essex County Council

Specification for Highway Works – Department for Transport

Signing Policy – Essex County Council

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