



4.0 | **Lighting Strategy**

4. Lighting Strategy

4.1 Outline Lighting Strategy

An outline lighting strategy informs many of the proposals under the Urban and Water Environment objectives. Appropriate lighting can:

- improve safety and a sense of well being;
- improve access and egress;
- expand periods of use, e.g. shopping hours;
- add theatre and drama to the night time scene; and
- create a greater sense of identity and legibility.

Good urban lighting should have a positive impact and one which is consistent with and reinforces the public realm strategy without requiring excessive maintenance requirements. There are three important issues to be considered in developing lighting strategies:

1. **Brightness.** An area that has good quality lighting enables easier orientation and allows better recognition of objects and people. The white light of modern metal halide lamps are particularly beneficial in this regard compared to the older, more orange and yellow coloured high or low pressure sodium lamps. Light pollution is also more effectively controlled.
2. **Colour rendering.** Good colour rendering displays objects and people in their true colours and similarly to above, the white light of metal halide produces much better colour rendition. Colours can be recognised more clearly and it is easier to judge the distance between objects as the scene will not be as flat and monochromatic in appearance.
3. **Uniformity.** This may be described as the absence of contrast and shadows. This can be manipulated depending on the objective. For instance, for a busy street where safety is a prime concern, good uniformity with a lack of shadows and unlit areas may be preferred.

The following is an outline lighting strategy (Figure 4.1A) and it is recommended that this is worked up into a masterplan which can perform as a reference framework for developing detailed lighting concepts by the public and private sectors. It is important that there is a coherence and consistency to the lighting of the public realm, the outline strategy is directed at:

- enhancing important landmarks, historic buildings, water environment;
- creating accent points for lighting to vary the night time environment e.g. at key entry/gateway points, as well as subtle variations to reflect character areas;
- improving sense of safety and security (for instance encouraging greater use of off roadside routes);
- improving the quality of the day time street scene through improved lighting furniture; and
- the opportunity should also be taken to build in power points, for instance within Riverside Meadows, to facilitate future events/exhibitions.

4.2 Bridge Lighting

Bridges at gateways may be lit to emphasise their importance. This lighting may take the form of lighting the underside of the bridge, lighting the water or lighting the bridge railings. Consideration should be given to light pollution particularly with respect to its ecological impact on aquatic species and bats who often roost in bridges.

Design Consideration

The illuminance needed to reveal a bridge effectively depends principally on the type of bridge, its surroundings (including the district brightness and the reflectance of the constructional material) and wherever possible the lighting should link the bridge to its approaches (water, vehicular and pedestrian) so that it is not

seen as an isolated feature in the environment.

A survey of the structure should be made to determine the optimum luminaire positions required to obtain a visual effect that will reveal the form and enhance the quality of the framework. Wherever possible provision should be made for incorporating the floodlighting equipment in the structure. If lighting has to be placed at considerable distances away it is difficult to minimise glare to traffic and pedestrians passing beneath.

The lighting must not distract the attention of road, pedestrian or marine traffic passing below or over the bridge and if any coloured light sources are used, special care must be taken to prevent confusion with signalling or navigation lights. Particular care should be taken regarding glare from high intensity floodlights. Louvres or shields will almost certainly be required.

For road and pedestrian traffic the lighting should conform to BS 5489-1:2003 and BS EN 13201-2:2003 taking in the benefits of using 'white' light over the 'yellow/orange' sodium light. It is to be remembered that all light patterns will be reflected on the waters surface and as such the night time illuminated visual scene is effectively doubled in area which can complement or even complete the desired visual scene.

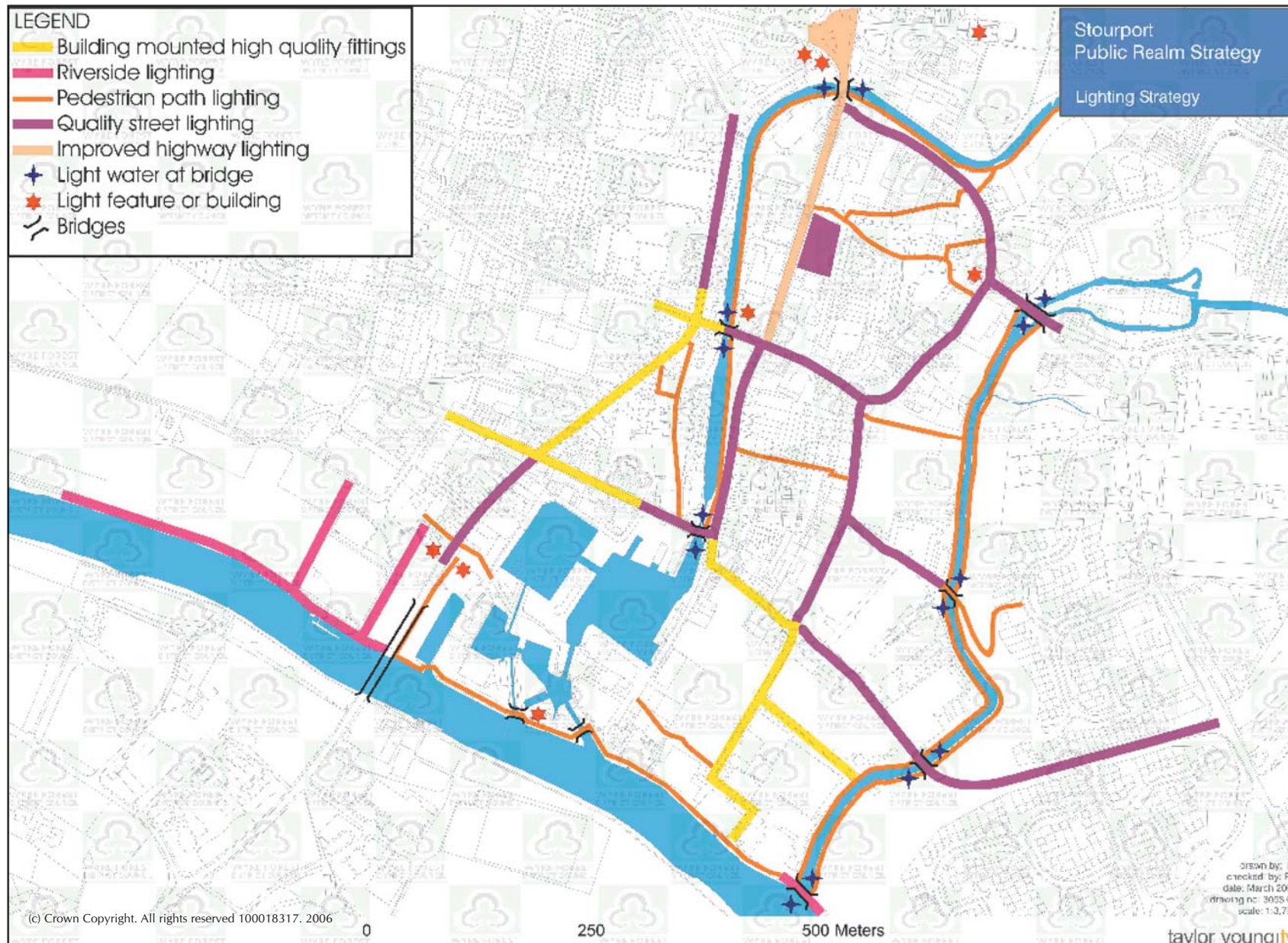
Feature Lighting Options

The type of feature lighting system and the location of luminaires should be dictated by the following:

- Visual night time linkage to the bridge approaches
- Strict control of light pollution and glare to bridge users, waterway users, surrounding properties and wildlife
- Ease of maintenance
- Low running costs
- High quality product

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Figure 4.1A
Lighting Strategy



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It is expected the Severn Bridge will respond well to side illumination by asymmetric floodlights and supplementary projector floodlights mounted on one or both banks. All floodlights should be mounted below the platform level of the bridge to minimise glare to traffic and pedestrians and the use of visors to control or re-direct spill light should be considered. Floodlighting (static colour or colour change / sequencing) the under-sides of the arch could be effective either with or without lighting the sides. In some cases involving river bridges this may be the only option because of access to the floodlights. Similarly, feature illumination integrated within the parapet could also provide an additional feature element to the structure above the platform.

Functional lighting

The existing parapet is designed to carry the road light equipment, ideally the street optic could be replaced with or upgraded with a modern, energy efficient design that complements the surrounding streetscape element design and provides a 'white light' task illumination that satisfies the criteria of BS 5489-1:2003 and BS EN 13201-2:2003. This is likely to be a long term ambition, however, as the existing lighting was relatively recently replaced.

4.3 Landmark Lighting

There are a number of landmark or importantly located buildings within Stourport. Highlighting these in the night time environment will aid orientation and help create a distinct sense of place. Traditionally public houses have used floodlighting but often in a way which is not related to the architectural form of the building. Modern light sources allow much greater control whereby lighting is used to highlight the character of a building rather than obliterate it. Lighting schemes need to be designed as compositions to pick up horizontal or vertical elements, and features such as windows, doors and cornices. A variety of lighting sources including LEDs can be considered and it is important that fittings do not detract

from the daytime appearance.

4.4 Accent Points

Closely associated with the above is the aspiration to use lighting to reinforce accents points or gateways. The desire is to ensure that elements of the design strategy derived for the day time are continued into the night time scene. Obvious features which fall into this category are bridges and buildings that are located at key entry points into the town centre to create an enhanced sense of arrival. The careful use of colour may also be considered for a more heightened effect but this should be selective to avoid overdoing and hence diluting the impact. Co-ordination is essential to avoid individual schemes competing with each other. Similarly to the above, a variety of lighting sources can be considered, LEDs in particular are cheap to maintain and permit a wide range of colours to be employed.

4.5 Pedestrian Routes

For improved security and safety, lighting along key pedestrian routes should be upgraded to higher quality white light sources. This is important not only for trafficked streets where good visibility between driver and pedestrian is necessary, but also to encourage safe use of off road routes and passageways. Pedestrian lighting will also serve to link together the night time environment and give it an overall coherence whilst reinforcing the preferred hierarchy of routes during the night time environment.

A modern light fitting is proposed which complements the traditional pendant form light fitting. The Philips 'Metronomis' Bordeaux CDS 590 fitting (see Plate 4.0A) uses a standard bulb and can be mounted in a number of ways that will complement the different character area:

- wall mounted on the High Street to replace the existing fittings;
- mounted on 3.5-4.5m columns for pedestrian routes (e.g. alleyways) if wall mounted is not feasible;
- mounted on 6-8m column mounted on Bridge Street and in the Gilgal to create an urban street feel;
- mounted on 8-10m columns on Vale Road for practical illumination purposes on this wide carriageway; and
- mounted on 4.5-6m columns on the riverside as a pedestrian luminaire.

The long-term aim for lighting the High Street will be to install post mounted lighting similar to that proposed for Bridge Street, creating a more compact, intimate street form. The practicalities of achieving this with respect to highway, budgetary and service constraints, may require the more practicable wall mounted solution to be pursued in the short to medium term.

Lighting proposals along the riverside meadows are for a distinctive, attractive and modern fitting in tandem with improvements to the park. Particular attention should be paid to forming a practical foot/cycle way along the north bank of the Severn to the Sandy Lane Industrial Estate, which can be used in the evening for commuting and here pedestrian lighting such as that suggested for alleyways could be employed. Along the Severn Riverside Meadows there may be an opportunity for an exciting, imaginative lighting scheme tied in with any new works to the park. Such a scheme could attract people down to the river at night which will reduce the nuisance of anti-social behaviour which currently fills the use vacuum, through natural surveillance.

4.6 Lighting as street furniture

Column mounted lighting in particular, also has an impact on the daytime environment. The strategy aims to improve lighting throughout the town centre along core streets and this includes the visual quality of the columns and lamp fittings. Furthermore,



5.0

Design Codes

5. Design Codes

The design codes are organised so as to:

- **reinforce the town's identity;**
- **help tie the different elements of the town together through a consistency in the web of the public realm;**
- **strengthen the character of the individual character areas; and**
- **create a practical, durable palette of materials.**

This Section is organised such that each element namely; surfacing, street furniture, lighting, soft landscape, artwork and bridge design are discussed separately and followed by Design Codes relating to each Character Area.

English Heritage are leading on the 'Unlocking Stourport's Past' projects. The resulting document should provide an important source of information to designers in preparing detailed specifications.

5.1 Street Furniture

Street furniture includes seating, signage, bins, bollards, railings and boundary elements. The general style of the street furniture in the different Character Areas is discussed below.

Town Centre

Contemporary style furniture in traditional materials using a black painted finish and wooden benches for warmth both physically and in character. Standard products are proposed, but bespoke designs fusing elements of the character of the town should be considered. For instance interesting uses of wood and corten steel for bollards and benches.

Rivers Severn and Stour

Robust, exciting, quality futuristic styles and materials. There is

the opportunity to develop a more dynamic environment on the river meadows as they do not have to tie in to the historic forms that influence the other character area. Standard products are proposed but bespoke themed designs are also appropriate.

Canal Basins

The Basins masterplan proposes a palette of materials that should be used in this character area. Corten steel benches and bollards contrast with a more traditional black steel lighting column. Chunky wood elements are also in the new design language of the area, relating to the area's industrial heritage.

Gilgal

Traditional style furniture to emphasise that this area is the early part of the Town

5.2 Surfacing

Historically, Stourport's main building materials are brick and sandstone developed from local clay and rock. Brick is the most common of these materials due to its cheaper cost and the fragility of the local red Bunter Sandstone which is a relatively soft material and not resistant to wear. Because of this, there is a danger that the clay based materials overly-dominate the urban environment. In response to this, and to mark a step change in the quality and regeneration of Stourport, the design codes proposed the use of granite within the town centre core. This will relate particularly well to existing granite kerbs and setts. The gritstone is generally used on pavements, where vehicular traffic is expected, a mix of grey and silver-grey granite is proposed due to its durability and to define a different environment. Kerbs are to be grey granite for durability and definition.

Along the riverside, a more informal approach to surfacing is

proposed using resin bound gravel paths edged in the traditional diamond topped blue brick. The paving for the Canal Basins area is based on the work by British Waterways whose Basins restoration project is now underway. Here surfacing uses clay pavers, Marshalls "Tegula", grey blocks, grey granite and tarmac. The restoration scheme uses cast iron kerbing for its historic significance. New developments might use the cast iron kerbs at important corners with the remainder of the kerbing being the same silver-grey granite used more widely in the town.

Road surfaces will generally be simple tarmac for practicality, durability and ease of maintenance. Along the High Street, red granite aggregate is proposed within the tarmac structure to create a slightly different character in an area where there are most pedestrians.

5.3 Lighting

An outline lighting strategy is set out in Section 4 of this document.

5.4 Artwork

Artwork will be important in reinforcing the identity of the town on the ground. The town's unique heritage combined with its setting will be the major influence in resulting public art proposals. A variety of small scale artistic interventions will over time create a web of detail adding to the heritage quality of the town and the memorable quality of the visitor experience.

These small scale elements will include signage, interpretation plaques, special seating, balustrades and bollards, interpretive sound and light works, gateways, and stand alone focal points.

Larger works may be possible where gateways and focal points are required round the fringes of the town centre where the

5. Design Codes

urban context changes or opens out. These will importantly confirm a greater sense of arrival to the town. This may be where collaborative opportunities for artists present themselves such as in the design of new bridges, promenades and public spaces. In these opportunities for artworks a more contemporary and dynamic approach can be taken with design and materials in line with the principles set out elsewhere.

In this way materials for artwork in the town centre may include cast iron, bronze and gunmetal, with etched bronze and copper, carved stone, and forged iron. The river corridor on the other hand may also use some or all of these materials but alongside others such as Corten and stainless steels, ceramics and timber.

In each case the opportunity for the detailed integration of lighting as part of the public art palette will need to be considered from the outset.

At relevant locations the integration of artwork as part of seating, balustrade, walling and paving should be seen as an important design consideration, and as such, artists should be commissioned early in any development project. Public art can play an important role in peeling back the layers of the town to reveal its story and that of its residents, and in so doing create a lively, dynamic and most importantly legible public realm. Public art strategically woven into the fabric of the public realm from the outset will reinforce and enhance the town's sense of place.

Each existing or created “dwell” point within the town, whether seating area, lookout, or gathering place will provide an opportunity for public art and interpretation. An informed appreciation of each view can be stimulated and in progressing around the town the visitor will absorb Stourport's story in a relaxed and open manner without reliance on printed guides.

Colour, along with scale, form and texture plays a significant

role in the acceptability of development and a successful public realm.

Colour can influence how buildings sit in the landscape, either through integration or through accent and emphasis. Inappropriate use of colour, no matter how successful the manipulation of form, can render a development unsatisfactory and can seriously jeopardise the integrity of surrounding buildings and streetscape.

The enhancement of the town centre and its public realm can be significantly underscored by the strategic application of an Environmental Colour Assessment (ECA). This will determine the inherent colour characteristics of Stourport through survey and analysis and produce colour charts and specific recommendations used to guide the selection of colours for both new development and refurbishment or restoration. ECA is beneficial as an objective and scientific method for determining the choice of colour of built forms and structures, materials, vegetation and surfaces. The process can be used to select colour on the basis of the need for camouflage, integration, stimulation or guidance. Recommendations are set out as a series of colour palettes based on the Natural Colour System (NCS) of the Scandinavian Colour Institute.

The colour study will provide a useful guide to a range of colour options for new developments and enhancement of the existing environment. Successful use of colour in this way can alter perceptions of scale and mass and assist legibility, ensuring not only visual relevance of developments but also that of the street scene and landscape as a whole.

The study palette can also be applied to the maintenance of existing structures incrementally raising over time the perceived quality of Stourport's urban core. For example a demonstrator project could be the repainting of the Victorian bridge over the Severn in concert with an enhanced lighting scheme. This

would reinforce this major gateway and enhance an important landmark in the town.

5.5 Soft Landscape

Soft landscape associated with developments generally includes formal planting of trees, shrubs and grass, but can also include less formal, more naturalistic wildflower meadows, woodland planting, wetland areas, marginal and aquatic planting. The less formal elements are only likely to apply to the Rivers Severn and Stour Character Area.

Maintenance should be a primary consideration when proposing soft landscape with types of planting and species selected accordingly. Generally amenity grass needs more maintenance than shrub planting, which needs more maintenance than trees.

Tree and shrub species should be selected such that their mature size is appropriate to their location. The mature size of different tree species vary considerably in both height and spread, choosing the correct species will allow for tree planting in areas that might normally seem too small to allow a tree to grow properly. A range of compact species include:

- **Acer rubrum 'Armstrong'**
- **Alnus cordata**
- **Betulus pendula 'Fastigiata'**
- **Carpinus betulus 'Frans Fontaine'**
- **Pyrus calleryana 'Chanticleer'**
- **Quercus robur 'Fastigiata'**

Trees must be planted in generous tree pits using approved tree soil and supports. Root barriers can be used where appropriate to reduce the spread of the tree near buildings and services. Care must be taken when planting trees or shrubs near highways to ensure visibility is not interrupted. Guidance is available in Worcestershire County Council's 'Transportation and Development Control Guide'.

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5.6 Bridge Design

Bridges must either be designed to complement the existing vernacular or, in particular instances, there may be the opportunity for an iconic modern bridge structure. In the case of the latter, a long term aspiration would be to construct a high quality, contemporary footbridge across the River Severn to draw the two sides of the river closer together. Examples are shown on Plates 5.6 A, B and C.

Generally however, bridges should complement the arched truss form with masonry abutments seen in the existing Severn Bridge. Railings should be visually permeable, and corners to the abutments should be constructed out of solid blocks of the local red Bunter Sandstone as seen in the footbridge between the Lower and Upper Canal basins outside the Tontine Building. The remainder of the abutment should be constructed out of complementary brick. Most new bridges will be much narrower than the Severn Bridge and as such, the arch of the bridge should be steep, approaching 180 degrees, as can be seen in the famous Ironbridge to emphasise the arch form. Reference to the existing river and canal vernacular are considered not appropriate for the design of new bridges across the River Stour.

The design of new bridges will have to comply with the latest legislation with respect to the Disability Discrimination Act (1995). This may require careful consideration of the design of approach ramps if a significant level change is necessary.



Plate 5.6A



Plate 5.6B



Plate 5.6C

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5.7 Palette for Town Centre Core Character Area

Theme:

A contemporary range is recommended which respects potential heritage locations but symbolises looking to the future rather than the past. Timber seating for preferred for comfort and where subject to better surveillance. High quality granite is preferred for surfaces.

Street Furniture



Lighting: Philips 'Metronomis' Bordeaux wall mounted (High Street).



Philips Metronomis Berlin past top mounted on 6m tapered column (Bridge Street)

Bench: Streetlife 'Wait&Stay' with backrest for four people and without backrest. Alternative: BenkertBanke 400TE, with or without armrests, steel finished in selected RAL colour



Litter bin: Benkertbanke type 400 litterbin (without ashtray) powder coated, stainless steel finish in selected RAL colour



Bollard: BenkertBanke 'Type 200' & 'Type 500' powder coated stainless steel painted in selected RAL colour

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Railings: DW Windsor, Bespoke pedestrian guard rails



Examples of Bespoke Bollards



Signage: artist designed signage and interpretation



Signage: Woodhouse



Surface Materials:

Dark & mid grey granite. Variety of unit sizes and finishes, e.g. cropped or flamed, can be employed.



Paving: Gritstone paving slabs diamond sawn finish. 3no 600mm x 50mm courses followed by 2no 450mm x 50mm courses. Min 75mm overlap between joints. Coursed perpendicular to the kerb. Courses faceted to take up the curve of the road.

Trim: Pattern introduced with mid-grey granite.

Kerbs: dark grey granite.

Junction: Granite setts silver/grey mix cropped finish. 100mm x 200mm x 75mm.

Shared surface & Crossing points: Granite blocks silver/grey mix diamond sawn finish. 150mm width x random lengths min 130mm max 300mm x 75mm.

Road trim: Granite blocks, grey, diamond sawn finish. 100mm x 200mm x 75mm. Cropped finish for vehicular only - paving and to delineate pedestrian routes.

Road (select areas): Hot rolled asphalt with red granite aggregate.

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5.8 Palette for the Rivers Severn and Stour Character Area

Theme:

Around the core area of the River Severn a high quality contemporary range is envisaged which could include stainless steel (GRP can also be considered particularly artistic forms) with the emphasis on modern, bold designs. Upstream and further away from the town centre including along the eastern bank of the River Stour, the approach is more naturalistic and park like, with the emphasis on simple, robust timber furniture. Resin bound gravel or unbound for more infrequently used for out of town surfacing is preferred.

Surface materials

Paths: resin bound gravel buff colour.
Edging: blue diamond pattern pavers.

Street Furniture



Philips Metronomis 2
Oslo on 4.5 or 6m curved column.



Woodhouse
Geolight Stack 4-8m high, coloured filters available.



Bench: Metalco 'Libre' seat available with back and armrest.



Litter bin: DW Windsor 'Litter Shark 1'. Option for 'Litter Shark 2' (larger capacity) in car parking areas.
Bollard: Benkurt Banke 'Type 200' powder coated stainless steel metallic silver.



Woodhouse Geo bollard brushed and/or head blasted finish. Variety of heights, diameters & fittings available.



Woodhouse Geo lighting Bollard, finishes as for bollard.

Accent lighting

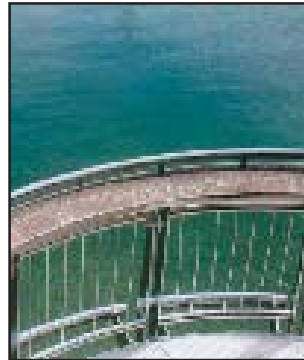
Tree station uplighters, wall uplighters, floodlighting of features eg. buildings. bridges etc.



Example of Bespoke benches



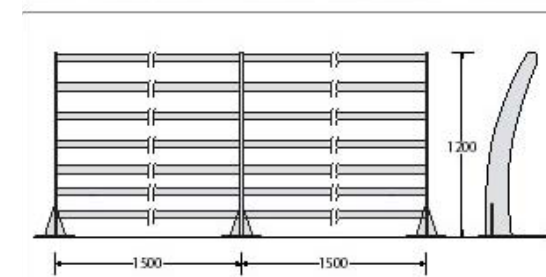
Artist designed waterside interpretation (Eaton Waygood Associates)



Signposts as per Town Centre Core with opportunity for bespoke design particularly at focal points



Railings:
Marshalls
Series 9100
7r



Examples of stone/concrete seating (Escofet) Socrates and



Barana



River Stour and 'natural' areas of River Sever example of simple furniture seat/bench. (streetlife rough and ready 6)



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5.9 Palette for the Canal Basins Character Area

Theme:

Furniture range already established with the emphasis on contemporary steel with block paving surfacing.

Surface materials

Paths: clay pavers, Marshalls "Tegula", grey blocks, grey granite and tarmac.

Edging: Cast Iron Kerbs at key corners, otherwise Silver-grey Granite Kerbs.

Street Furniture

Lighting: post top lamp or building mounted

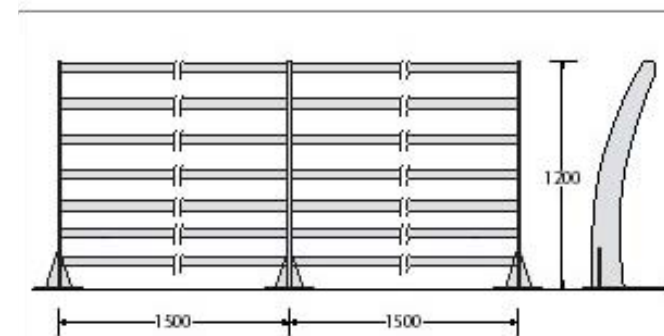


Litter bin: Escofet Morella Bin



Bollard: Escofet Luco Mojón

Railings: Marshalls Series 9100 7r
If required, railings to be used sparingly in the manner of the canal basins area.



Bench: Escofet Taburete / Banqueta Morella and Escofet Bagdad Café



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5.10 Palette for the Industrial Character Area

For the proposed urban streets, spaces & car parks (plus some applications to riverside promenades) the following materials from the town centre palette are considered relevant:



Philips Metronomis Berlin past top mounted on 6m tapered column



Litter bin: Berkertbanke type 400 litterbin (without ashtray) powder coated, stainless steel finish in selected RAL colour



Bench: Streetlife 'Wait&Stay' with backrest for four people and without backrest. Alternative: BenkertBanke 400TE, with or without armrests, steel finished in selected RAL colour

Signage: Woodhouse



Surface Treatments: To include granite sets and curb stones and for roads hot rolled asphalt with red granite aggregate as appropriate

Certain aspects of the riverside palette may be appropriate to both the River Stour frontage and urban streets and spaces as follows:

Urban and Riverside Environments



Woodhouse Geo lighting Bollard, finishes as for bollard.



Woodhouse Geo bollard brushed and/or head blasted finish. Variety of heights, diameters & fittings available.

River Stour Promenade



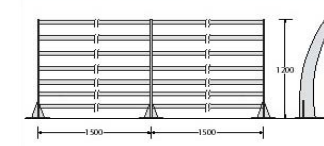
Philips Metronomis 2 Oslo on 4.5 or 6m curved column.



Woodhouse Geolight Stack 4-8m high, coloured filters available.



Railings: Marshalls Series 9100 7r



Examples of stone/concrete seating (Escofet) Socrates and Barana

Buildings and Bridges: Accent Lighting (See palette for Rivers Severn and Stour Character Areas)

5. Design Codes

5.11 Palette for the Gilgal Character Area

Theme:

To reinforce the historic nature of this character area Victorian style furniture is deliberately chosen. It is recommended that yorkstone or gritstone is used for surfacing.

Surface Materials

Paving: Yorkstone or Gritstone paving slabs diamond sawn finish. 3no 600mm x 50mm courses followed by 2no 450mm x 50mm courses. Min 75mm overlap between joints. Coursed perpendicular to the kerb. Courses faceted to take up the curve of the road.

Kerbs: Silver/grey granite.

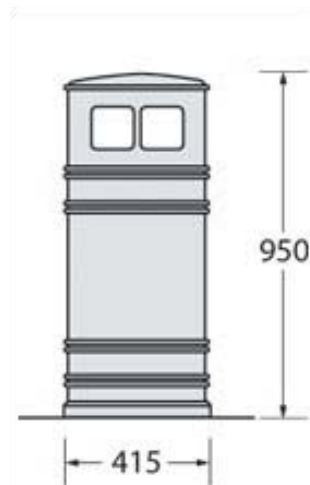
Street Furniture

Lighting: Philips 'Metronomis' Bordeaux lamp on ZGP 560 Metro column and ZRP556 long curved bracket.



Bench: Metalco 'Boston'

Litter Bin: Marshalls MSF Heritage MS5501



Bollard: DW Windsor 'Optima small'