



LIGHT AT THE END OF THE TUNNEL

Transforming central London's railway viaduct
Volume 1: main findings

1



CROSS RIVER
PARTNERSHIP

Some Key Facts:

- The length of railway viaducts in the London South Central area is approximately **10km**, making it the biggest building in London
- The combined length of the **90** tunnels that can be travelled through is **4km**
- There are approx **1000** business units available to let in the adjoining arches
- In London South Central, there are nearly **260,000** square metres of potential redevelopment space under the viaduct, with potential to create or retain over **10,000** jobs.
- London Bridge is the oldest station, opening in **1836**, and running to Greenwich.
- The remaining viaducts were all built in the following 50 years, between 1836-1886.
- The seven wards that the railway viaduct straddles are within the **20% most deprived** in the country.
- There is only **one** route north-south which avoids passing through the viaduct – via Mepham Street, immediately in front of Waterloo Station.
- There are **97 million** separate pedestrian journeys made through the tunnels every year

Forward to Volume One

This report offers a practical and affordable programme that will see the railway tunnels from Vauxhall to London Bridge transformed over the next few years, offering a clear way forward for all the partners involved.

Light at the End of the Tunnel presents a strategic opportunity to transform a physical barrier through creative, positive partnership action. The barrier will become a community asset, a place of work, and the site of varied and stimulating public spaces.

Over the past eight years, Cross River Partnership has focussed its attention on making the *river* a less formidable barrier. The results of these efforts have included two magnificent new bridges – the Millennium and Golden Jubilee footbridges - which have become international icons in their own right. The new two-way traffic they offer helps bring prosperity to the long neglected south, and allows a smoother passage for residents from the south to travel to the north for work. As you will see in this document, the railway viaduct to the south of the Thames has come over the years to form a similar barrier to the virtuous exchange between prosperity and people.

Interestingly, this programme is a partnership for more than just funding reasons. The split of ownership & responsibilities for the tunnels makes 'joining-up' not just a nebulous sound-bite, but the *only* way to bring about lasting change.

Light at the End of the Tunnel is refreshing mainly because it is a programme of action bringing together aspirations from the worlds of transport *and* economic development. In one programme, a huge piece of infrastructure will become more accessible for pedestrians moving from one side to the other - while simultaneously turning low-density employment space (with its historic uses of storage, car parking and motor repairs) into high-density employment space, making a full contribution to London's dynamic economy. We hope in this way to support the growth of small businesses, and thus improve access to employment. This in turn will address issues of social exclusion and poverty in Central London.

When the partnership started working on the Millennium and Golden Jubilee footbridges, many people doubted that such high-risk projects could be implemented by a voluntary partnership. There is no reason why we cannot similarly raise our sightlines to think of the railway viaducts in London South Central as a source of opportunity, and turn around a woeful history of neglect.

We are confident we can upgrade the whole of this extraordinary Victorian structure, but remain aware that we must also create a credible, properly-funded maintenance vehicle to make a permanent, sustainable difference.



Savas Sivetidis,
Director, Cross River Partnership
January 2004

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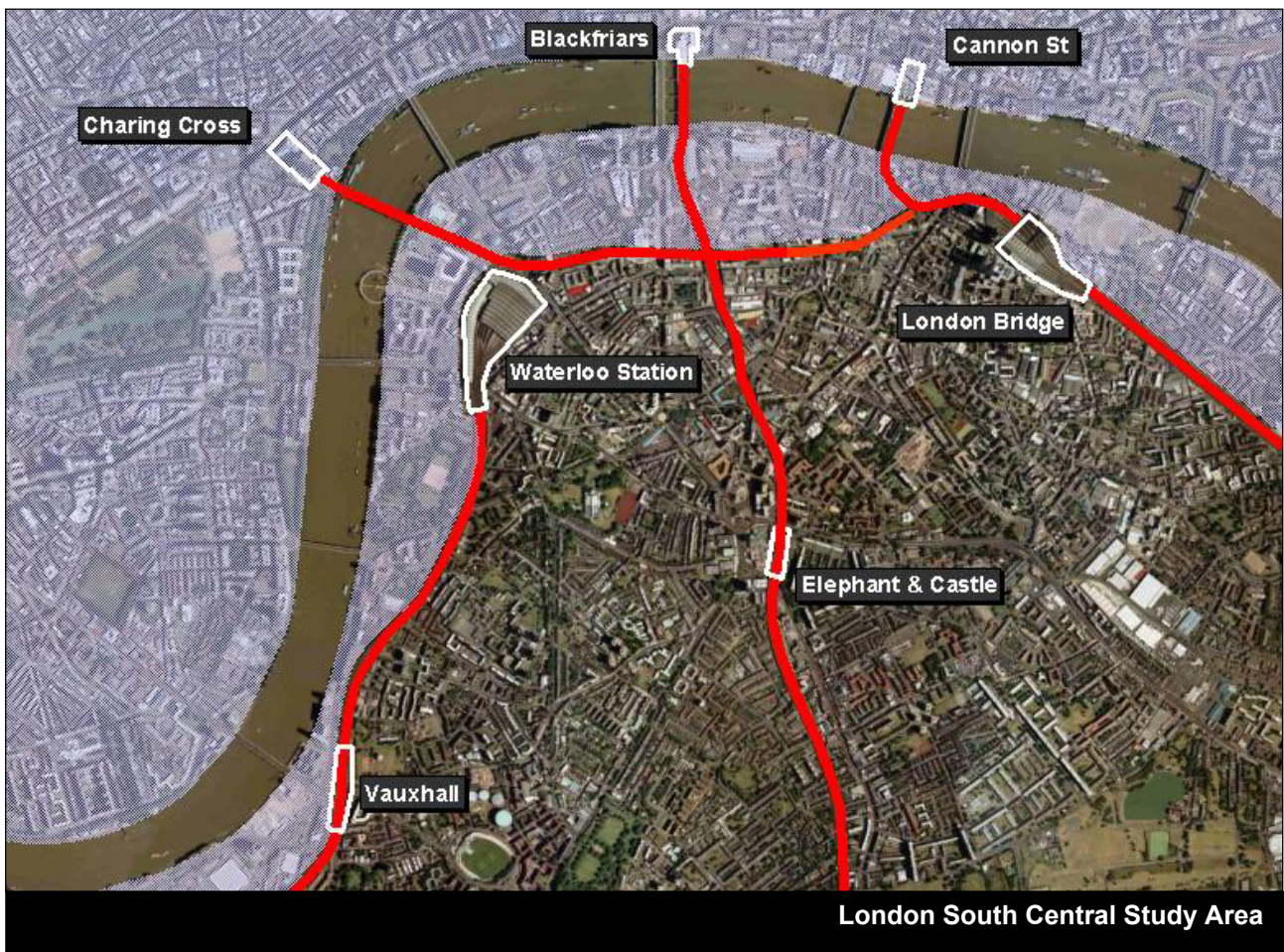
London South Central: Addressing Social Exclusion

The viaducts in London South Central (LSC) straddle seven wards in Lambeth and Southwark. These wards are some of the most deprived in the UK - some being among the worst 10%. On the basis of income deprivation, all are within the worst 20%. This indicates a significant reliance on income support, family tax credit and other state benefits. It also indicates the possible high incidence of people being prevented from work due to incapacity issues such as ill health or disability.

The high levels of deprivation on employment, income and education indices in an area located so close to Central London, with its high number of jobs, can in part be explained by the physical separation, and the dissecting impact of the viaduct itself, which this initiative is attempting to overcome.

The map below shows the area hemmed in by the viaduct that remains impervious to the spread of development across the river from the north, and from the west. However the purple-coloured strip between the viaduct and the river has effectively achieved the same status as that north of the river – the area traditionally known as 'Central London'.

It is worth remembering that there are affluent areas of Chelsea & Belgravia actually further south than the Elephant & Castle.



1. Introduction

1.1 Defining the Problems

Ask anyone living near one of the railway viaducts that plough through South London what these brick fixtures conjure up, and the reply will invariably be littered with phrases like 'pigeon-shit', 'barrier', 'scary', and 'disgusting'. There are about **four miles** of tunnels in the London South Central arc from Vauxhall to Bermondsey, taking in Waterloo and London Bridge, and the line from Cannon Street down through the Elephant and Castle. That's at least *three times as long as the Blackwall Tunnel* - along whose length maintenance is taken very seriously. In contrast, something like three-quarters of the tunnels along the viaducts in London South Central are in a very poor state of repair. The extraordinary thing is that just a stone's throw from the Houses of Parliament, there are tunnels that locals think twice about before entering.

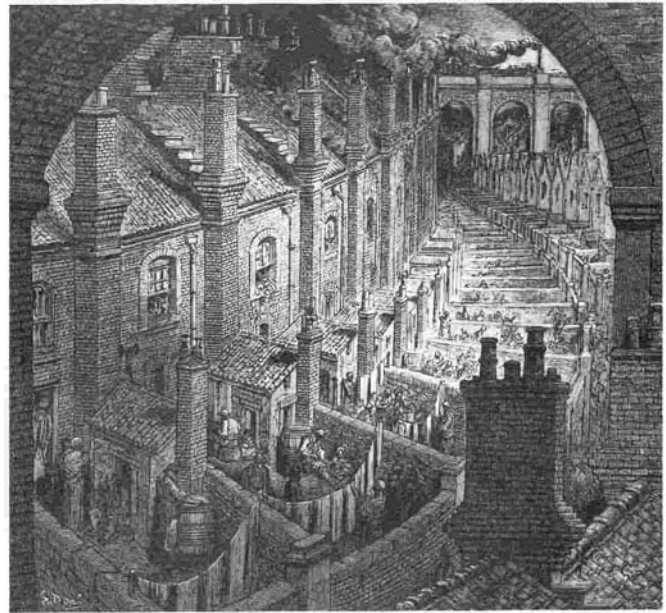
Of course, when the London & Greenwich Railway Company were contemplating building the capital's first railway line from London Bridge to Greenwich in the early 1830's, the question of how people pass beneath them would hardly have registered on the Victorian 'obstacles-to-be-overcome' radar of our top-hatted entrepreneurial forebears. With 976 arches, what could be the problem? It would certainly have been unimaginable that, 150 years on, the overflowing commuter lines carrying people to and from Waterloo, Victoria, Cannon Street, Charing Cross and London Bridge through South London would have created a divide now needing our close attention.



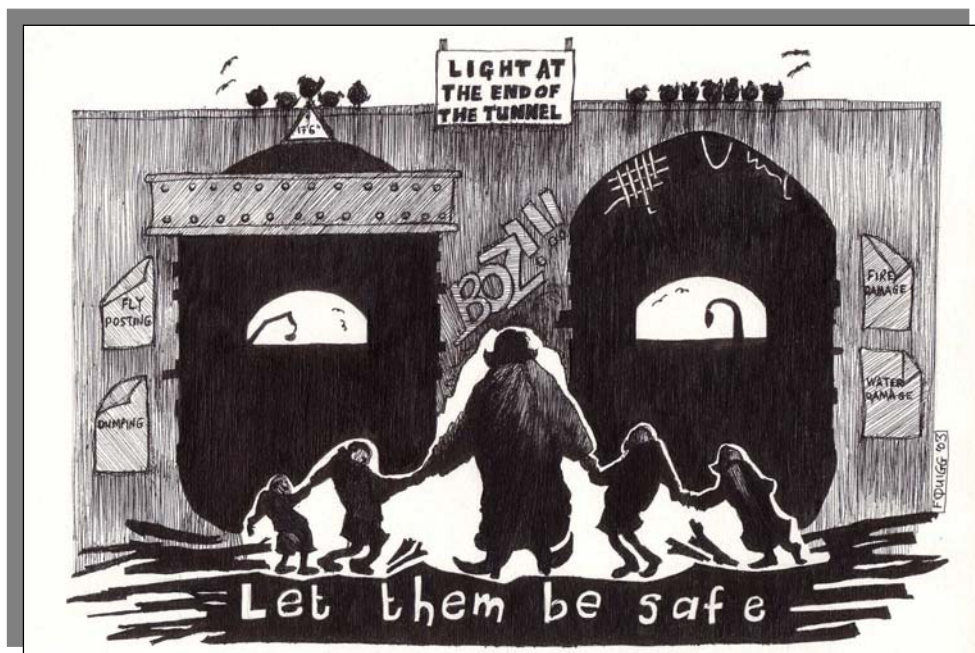
The newly-built viaduct running from Waterloo to Vauxhall in 1848, seen from the corner of Black Prince Rd/Newport St. A 'ragged school' would be built on this site some three years later, to replace the previous one, held in these arches. It would appear the developers of the era were not subject to particularly onerous 'planning gain' obligations.

But divide they surely have, dividing communities from each other, shoppers from shops, workers from jobs, and people from open spaces, walkways, and the riverside. Surveys of local opinion have consistently found the viaducts to be a problem for residents. Neither, for that matter, has the growing dominance of the car over the past 50 years helped things, relegating pedestrians, by default, to the bottom of the transport hierarchy.

We could call this the psychogeography of deprivation. And it may be helpful to use this term to reflect on the career of the railway arch and viaduct tunnel over the past 170 years. From the Ragged Schools of the middle 19th century, offering education for the growing army of urban poor, through the irregular beat metal-bashing of oil-smeared proto-mechanics, and on to the incessant pounding of techno-bass night-clubs in the 1990's, London's railway arches have borne mute witness to a rapidly shifting social, economic and technological landscape. As for the tunnels - the ways through - from Dickens to *The Matrix*, the dank, dripping railway tunnel has offered a backdrop for the nervous scurrying, ringing footsteps, and shady dealings of the wretched, the wicked, and the worried.



In *Light at the End of the Tunnel*, an opportunity has been carved out to turn a barrier into a series of distinctive, creative public spaces, alongside desirable commercial workspace. This will make the tunnels feel safer and easier to move through, while generating jobs for local people. More people-oriented commercial activities will contribute to this transformation: as most people know, people make people feel safe. The next section explains how we will go about these tasks.



1.2 Defining the Solutions

A series of initiatives have already been made by: Network Rail, Southwark and Lambeth Councils, Transport for London, Cross River Partnership, Pool of London Partnership, South Bank Employers Group, Waterloo Project Board, Better Bankside, & Vauxhall Riverside. *Light at the End of the Tunnel* will build on this work, having already secured three-year funding through **Transport for London's** Borough Spending Plan. At the heart of the project is the co-ordination and bringing together of the responsible agencies, all of whom are currently formal partners within CRP. In particular, **Network Rail** (a founding partner of CRP and owner of the viaduct), and their property arm **Spacia**, recognise the need to get behind the project.

CRP will bring together three strands of regenerative activity to address the problems caused by the viaduct: transport improvements, economic development, and adjacent public space improvements.



Transport Improvements

The first component of our work has involved an audit of the condition and use of the 90 pedestrian and road tunnels. Based on this work, a costed refurbishment programme has been devised. The results of the audit are presented tunnel-by-tunnel in pictorial and analytical form in **Volume Two** of this report, and a summary of the findings presented in the next Chapter.

A number of tunnels have already been refurbished and commitment has been made by a number of partners to a further round of refurbishments over the next 2-3 years.

Economic Development

The second strand of work extends the successful programme of refurbishment of commercial arches. While the *Light at the End of the Tunnel* audit focussed on the tunnels – the ways through – it became increasingly apparent in the course of the work that the employment uses in the adjacent arches were currently low density, contributing to the barrier effect of the viaduct.

There are nearly 260,000 square metres of potential redevelopment space across the viaduct, an area only fractionally smaller than the Paddington Special Policy redevelopment area. The redevelopment of this level of floorspace would result in the creation or retention of over 10,000 jobs across the viaduct in London South Central.

The job-creation potential of railway arches is therefore a major, but as yet largely untapped, opportunity for the area. Many of the arches are currently unoccupied or used as car parks or for storage. More beneficial uses would include offices, retail, community or cultural uses, cafés/bars and restaurants, which would provide improved local amenities and jobs for local people.

The railway viaduct is in the ownership of Network Rail, a company limited by guarantee reporting to members with no financial interest in the organisation. Network Rail is a founding partner organisation of Cross River Partnership, and has been instrumental in CRP's collaborative projects, including the recently completed Golden Jubilee bridges, which run adjacent to the Charing Cross railway bridge. The viaducts in London South Central form part of Network Rail's property portfolio of 2,500 stations and 40,000 bridges and tunnels. The arch space beneath the viaducts is managed by Network Rail's property-letting and management arm, Spacia.

Cross River Partnership, in conjunction with Spacia, has recently completed the renovation of six arches at Joan Street/Isabella Street, providing space for small and medium sized enterprises wishing to take advantage of flexible, affordable accommodation in a core location. Three of the six arches have been leased as a restaurant, providing a high-employment usage. It is likely that the restaurant alone will create the 21 jobs predicted in the project appraisal.



Rental rates in railway arches are relatively low in comparison to surrounding areas. This, coupled with the flexible terms and conditions offered by Spacia, means that the units provide ideal small business space. The lack of affordable business space is a key issue impacting on the economic potential of London South Central, which this initiative is tackling. A recent study has identified that 63% of small businesses found difficulty finding affordable accommodation, with 51% unable to find business space in the right location. 68% of those businesses surveyed would like to see more flexible lease terms, and 57% would like to see "more conversions of unusual buildings to create imaginative spaces to let".¹

Nationally, small and medium sized enterprises (SMEs) account for over 99% of all businesses in the UK (over 3.7 million companies), with 50% of national turnover (approximately £1 trillion annually) and employ over 22 million workers nationally. SMEs are identified by the DTI's Small Business Service as the greatest source of new jobs, providing jobs at all points of the economic cycle². In London, small and medium sized enterprises provide 69% of all jobs.³ They also provide more entry-level employment than larger businesses, offering appropriate opportunities for unemployed local residents of the London South Central area.

CRP is currently developing a large-scale demonstration project of approximately 10,000 square metres in an area of low-density usage and employment. This pilot will provide opportunities to promote investment in the viaduct by private funding sources. This will in turn accelerate refurbishment and achieve its job creation potential at the earliest possible date. The pilot will seek to address some of the needs of small business including a desire to be located in imaginative space, close to transport links and utilising brownfield development sites.⁴

¹ Small Business Property Monitor, Spacia, 2003

² Small Business Service, 2001.

³ London Employers' Survey, Business Link for London, 2002

⁴ Small Business Property Monitor, Spacia, 2003

2.2 Examples of Common Problems



1. Water damage to brick arch and walls
Sail Street



2. Water damage to white tiled sections
Addington Street



3. Graffiti on render
Whitgift Street



4. Graffiti on white tiles
Brunswick Court



5. Graffiti on parapet
Borough Road/Southwark Bridge Road



6. Render falling off
Black Prince Road

2.2 Examples of Common Problems cont..



7. Rusting and peeling parapet/ceiling
Alaska Street



8. Dilapidated surroundings
Bermondsey Street



9. Rubbish accumulates in pigeons nets
Rockingham Street



10. Pigeons rest in girder sections
Hopton Street



11. Lamp provides pigeon rest, despite netting.
Carlisle Lane



12. Consequent pigeon fouling on footpath.
Mepham Street

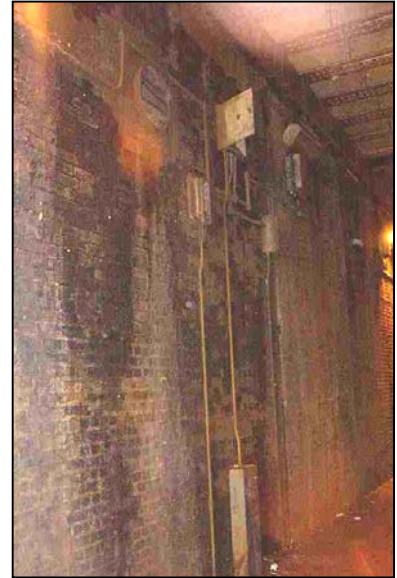
2.2 Examples of Common Problems cont..



13. Narrow, poor footpath
Centaur Street



14. Derelict doorway feature
Blackfriars Road



15. Redundant services
Carlisle Lane



16. Flyposting
Lambeth Road



17. Fly-tipping
Salamanca Street

2.2 Examples of Common Problems cont..



18. Tipping encourages fires
Miles Street



19. Major "A" road with narrow footpath
Bermondsey Street



20. Dumped vehicles
Salamanca Street







21. Refuse bins block footpath
Stainer Street

2.3 Prioritisation




While conducting the audits, it became apparent that certain sites had been neglected for a number of years; some were so bad that it was difficult to believe that anybody would be expected to walk down them. They could be dirty and unlit, with fly-tipping and fire damage, and some felt like nothing more than a mediaeval dungeon. Others had problems associated with narrow footpaths next to fast-moving traffic; or of being closed to traffic and having the feel of dead space with no real purpose.

2.3.1 High-Priority Sites:




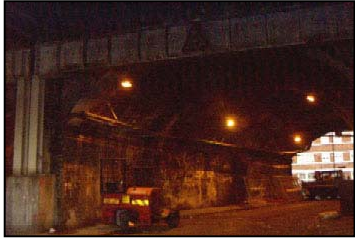

All of the audits were reviewed, and the following arches identified as 'High Priority':

<p>Addington Street (Waterloo) Difficult to get to; derelict buildings adjacent to the entrance; filthy walls; inadequate lighting; narrow footpath in poor condition. Heavy vehicle use is intimidating, with poor pedestrian facilities</p>	
<p>Centaur Street (Waterloo) Walls and ceiling are filthy; unpainted steel parapet and ceiling at one end; pigeon droppings; poor footpath. Completely run-down and in a terrible state.</p>	
<p>Virgil Street (Waterloo) Vehicle repair shop does not make this feel safer; the pavement is blocked with vehicles and trade refuse; walls are filthy, poorly lit; narrow footpath covered in pigeon droppings; boarded-up arches, fly-tipping and fire-damage. One of the worst arches seen in this audit, yet this is within 1/3 mile of the Houses of Parliament.</p>	
<p>Old Paradise Street (Lambeth Bridge) This is in a run-down area and there are piles of rubbish and graffiti everywhere. The approach to the bridge is intimidating; rendered walls are unpainted, filthy and damaged; footpath poor and covered in pigeon droppings; the concrete ceiling has visible holes in it</p>	



2.3.1 High-Priority Sites cont..

<p>Salamanca Street (Lambeth Bridge) The adjacent development works (Albert Embankment) seem to encourage an abandoned atmosphere, with fly-tipping and graffiti on the white-rendered walls. The road has holes in it and the walls are filthy; poor lighting; pigeon droppings.</p> <p><i>- Refurbishment planned as part of S106 Agreement</i></p>	
<p>South Lambeth Place (Vauxhall) At the moment, this tunnel has the atmosphere of an old dungeon. The wall and ceiling are in very poor condition. It's proximity to the new Vauxhall Cross Interchange, coupled with the large number of users accessing the station, mark this as a high priority site.</p>	
<p>Alaska Street (Waterloo) Very dark and gloomy, the steep angle of the bridge means that the street looks as if it goes nowhere. Very narrow footpath; no pigeon nets in girders hence fouling; walls are filthy; poorly-lit.</p>	
<p>Ewer Street (Bankside) There is an old wire fence along the western side which creates a narrow strip of waste-land, full of junk and litter. The east side is a blank brick wall topped with barbed wire, and the steel door completes the feel of a dungeon or prison. Run-down and uncared for, the walls and footpath are filthy.</p>	
<p>Stainer Street (London Bridge) This is part of the main A200 route out of London, which means that traffic speeds along this one-way street. The narrow and blocked (by bins) footpath means that pedestrians have to walk in the road at certain points. The dirt and the noise mean that this is intimidating for pedestrians.</p>	

2.3.1 High-Priority Sites cont..

<p>Bermondsey Street (London Bridge/Bermondsey) Whilst this tunnel looks bright and well-lit, the walls and ceiling are filthy and water-stained. The old pipework and fittings add to the intimidating atmosphere, as does the dilapidated building at the Northern entrance</p>	
<p>Barnum Street (London Bridge/Bermondsey) Concrete paving is narrow and tatty; graffiti; walls are dirty and water-damaged.</p>	
<p>Crucifix Lane (London Bridge/Bermondsey) Very dark and gloomy with heavy vehicle usage, the walls are dirty and water-damaged, and the footpath is poor – not pedestrian-friendly. Poorly-lit.</p>	
<p>Whites Grounds (London Bridge/Bermondsey) Two tunnels (one each-way): dirty water damaged walls and arch, paving is narrow and in poor condition; dimly-lit with redundant heavy-duty cabling and utilities. Are two tunnels necessary?</p>	
<p>Tanner Street (Tower Bridge/Bermondsey) Dirty old brickwork with water damage. Rendered section in very poor condition (this is usual). Poorly-lit, filthy and dungeon-like. Cleansing is an issue – rubbish accumulates here.</p>	

2.3.1 High-Priority Sites cont..

<p>Millstream Road (Tower Bridge/Bermondsey) This tunnel barely has a footpath, and is dark, filthy and intimidating. It has been completely neglected and is one of the worst sites visited in this in this audit. There is a problem car dumping, fly-tipping and fires.</p>	
<p>Glasshill Street (Borough/Elephant) The walls are graffiti'd and water damaged; very narrow paving in poor condition; no pigeon nets in girders hence droppings; dark and run-down. The street is rubbish-strewn. Adjacent arches are used as a dump.</p>	




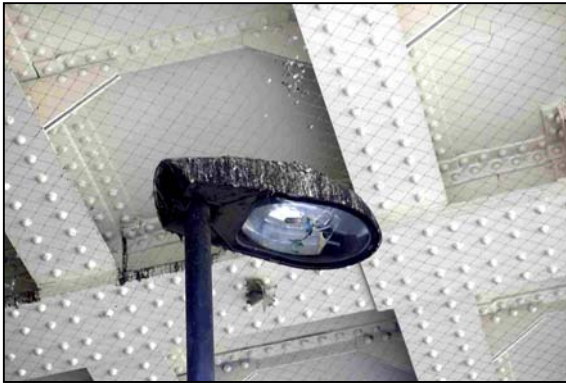
2.3.2 Medium Priority Sites

In addition to those categorised above as being '**High Priority**', the following arches/bridges were identified as being '**Medium Priority**':

Carlisle Lane (S):	Walls are filthy, pigeon nets ineffective due to internal lamp columns.
Sail Street:	Poor, narrow paving and water damage to walls; the road surface has worn back to reveal the old cobbles.
Whitgift Street:	The render is falling off the wall (as is usual), and both this, and the white tiles are heavily graffiti-covered.
Black Prince Road:	Render is falling off the walls, poor footpath, filthy white tiled section
Glasshouse Walk:	Old machinery/utilities, lights not working, poor footpath; wall finished with rendering in very poor condition
Miles Street:	Wall and ceiling are filthy and in poor condition – rendering falling off. The road is blocked to through-traffic which leaves this as 'dead-space' with no apparent function. This encourages fly-tipping and fires. The street furniture (bollards) are in poor condition.
Mepham Street:	No pigeon nets; redundant street furniture (lamp column & old doorway); ceiling is rusty and peeling; walls are filthy with graffiti and flyposting.
Greet Street:	Graffiti; pigeon fouling; the closure of Brad street immediately to the North means that the street has no function – it only leads to the staff car-park at the back of Southwark Station.
Hatfields:	Redundant street furniture; pigeon-droppings; dirty walls – the recent Joan Street re-development shows this space up as shabby. Ceiling needs painting.
Gambia Street:	Old bricked-up and boarded-up arches are unsightly; graffiti on approach to arch.
Great Guildford St:	Narrow footpath with bollards; unsightly structure on East is alienating and unsightly; fly-tipping
Redcross Way:	White-tiled section is filthy; walls are water-damaged; very narrow footpath in poor condition; old iron doorway is unsightly; local fly-posting
Weston Street:	Cars race along here and the narrow and poor footpath means that this is dangerous and intimidating for pedestrians; dirty walls and old redundant fittings
Shand Street:	Dirty brick walls with graffiti and water damage; graffiti and flyposting; footpath is narrow and of poor quality
Roper Lane:	White-tiled section filthy and covered with graffiti; bricked-up arch is ugly; paving is poor and narrow.
Surrey Row:	Very narrow footpath, some graffiti; walls need cleaning.
Pocock Street:	Walls need cleaning; footpath need renovating; concrete parapet is drab and unsightly.
St James' Street:	Dirty walls; narrow footpath; graffiti.

2.4 'Designing-Out' the Problems

A number of tunnels have been refurbished over the past 2-3 years. We have set out here some examples of design solutions that have worked, with an example of the specific problem that is being addressed.

Solution	Existing problem
	
<p>Steel Arch Cover Joan Street</p>	<p>Wooden Arch Cover, Gambia Street</p>
	
<p>Pigeon-proof light fitting design O'Meara Street</p>	<p>Old-style lamp column encourages pigeons Lambeth Road</p>

2.4 'Designing-Out' the Problems cont..



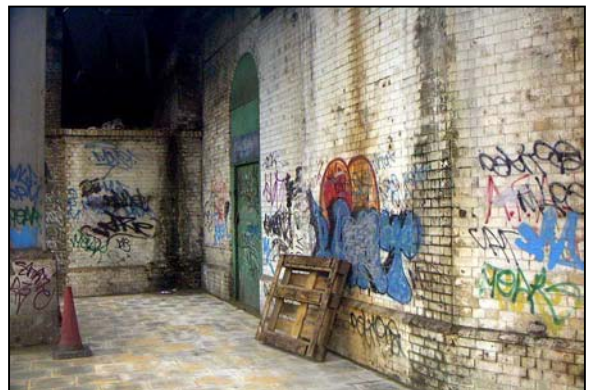
Raised wooden chevron covering walls,
reduces graffiti and flyposting
Parry Street



Constant, large-format flyposting
Lambeth Road



White tiles, cleaned and
coated with anti-graffiti treatment
Brunswick Court (May 2003)



Same site before treatment
Brunswick Court (Jan 2003)

2.5 Examples of Public Art Solutions

Here are some examples of public art ‘interventions’ that have been used to enliven tunnels and other public spaces.



Tiverton Street, Elephant & Castle



Southwark Bridge Road, Southwark



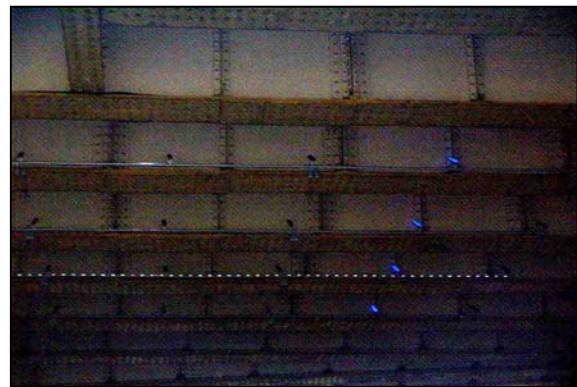
Sutton Walk, Waterloo



Wornington Road, North Kensington



Arch 401, Union Street, Southwark



Green Dragon Court, Borough Market

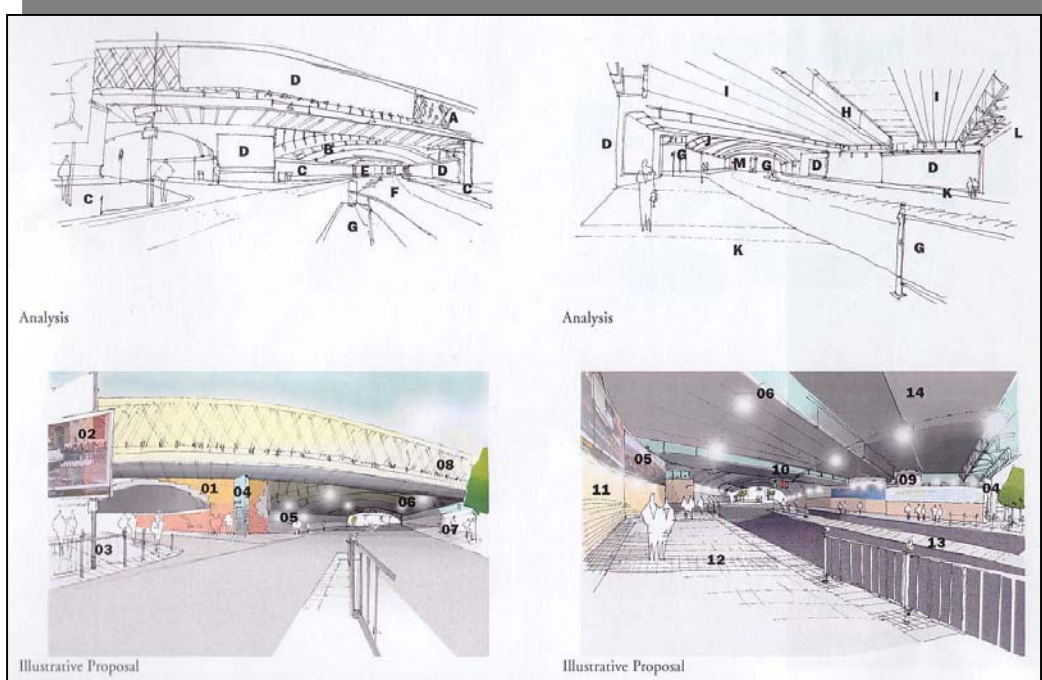
3. Works in Development

3.1 Addington Street and Westminster Bridge Road

It is intended to carry out works here as part of a Section 106 agreement with Frogmore, the developers of One Westminster Bridge. This will contribute to an improved perception of the Peninsula building when emerging from the station complex or travelling North, and will assist in the general upgrading of the area.

The sums involved are £300k for Addington Street, and £1.32m for Westminster Bridge Road. Frogmore have the option of carrying out the work themselves at this time, or of handing the money over to Lambeth for implementation. The analysis below was carried out by Frogmore's architects as part of their planning application in Spring 2002.

Existing Problems	Improvements Measures
<p>A. Dominance of 'old' style railway arches in contrast to west approach.</p> <p>B. Strong presence of arches</p> <p>C. Poor quality floorscape and brick walling</p> <p>D. Over-dominant role of advertising</p> <p>E. Potential focal point of new peninsular building</p> <p>F. Dark space with poor light levels</p> <p>G. Furniture and signage clutter</p> <p>H. Strong form of major beams</p> <p>I. Dark coffers suppress the space</p> <p>J. Strong expression of older arches</p> <p>K. Poor quality floor and lighting</p> <p>L. 'Eurostar' character</p> <p>M. Lack of focal point</p>	<p>1. Brickwork cleaned and advertising rationalised</p> <p>2. Rationalised and condense signage and lighting</p> <p>3. Repaved and re-fenced</p> <p>4. Totem signage for pedestrian orientation and information</p> <p>5. Advertising 'frieze'</p> <p>6. Catenary lighting to emphasize curved space</p> <p>7. New bus stop and street trees</p> <p>8. 'Lambeth' gateway with contrasting paint finish</p> <p>9. Side-lighting to emphasize openings</p> <p>10. Central traffic lights and signage</p> <p>11. Brickwork cleaned and re-painted with anti-graffiti finish</p> <p>12. New silver-grey exposed aggregate paving</p> <p>13. Paved central reservation to reduce usual impact of road</p> <p>14. 'Waterloo' beams with repainted finish in Silver/Blue with side-lighting</p>



3.2 Black Prince Road

Lambeth has received £150k as part of a Section 106 agreement with Berkeley Homes. This is in respect of the 9 Albert Embankment/Salamanca Place hotel development. The works are based on those proposed in the Eric Parry Architects report for Lambeth, *“Albert Embankment, Transforming Landscapes”* (Spring 2002). This report proposes general environmental improvements to the area surrounding the railway arches, and suggests the following:

1. Expose and repair the worthwhile existing hard landscape.
2. Provide a robust new road surface, which is dressed up to the retained surfaces.
3. Provide a new pedestrian surface with high granite kerbs and flush crossovers protected by granite corner stones. Bollards could be removed.
4. Provide new street signage in character with the new hard landscape.
5. Work with artists to create brightly coloured ceramic panels to clad the length of the north side of each viaduct tunnel. The panels would fold natural light into these dark spaces.
6. Clean back, re-point and provide new guttering and add anti-pigeon protection to each viaduct tunnel and entrance.

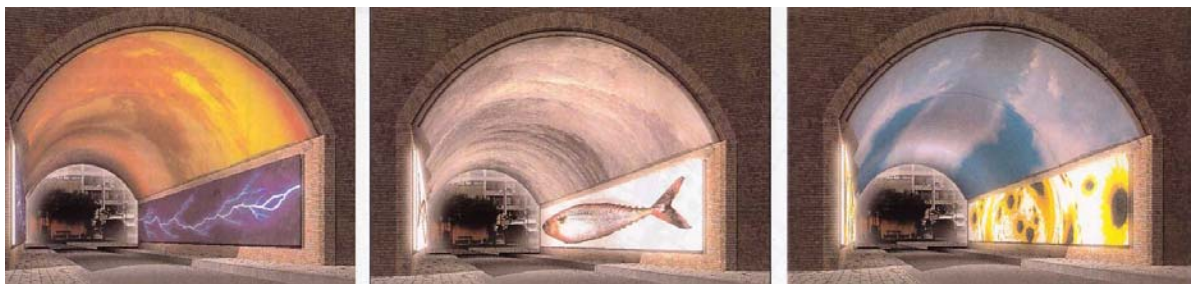


3.3 Salamanca Street

Lambeth has also received £150k in Section 106 monies from Albert Hotel/Riverbank Hotel Ltd, for the Queensborough House development at 12-18 Albert Embankment. Again the works will be based on those proposed in the Eric Parry report, *“Albert Embankment, Transforming Landscapes”* - see above.

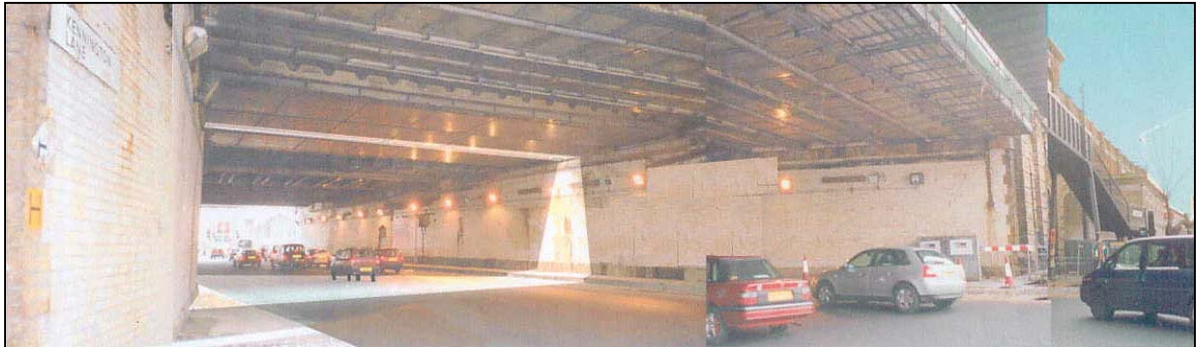
3.4 Hercules Road

A project involving improvements to one or more of the arches at Hercules Road is at the appraisal stage. This is being led by the South Bank Employers Group, in collaboration with Spacia. Initial proposals for works here were identified in the SBEG report, *“South Bank Urban Design Strategy”* (April 2000).



3.5 South Lambeth Place

South Lambeth Place is being upgraded by Transport for London in partnership with Cross River Partnership and Network Rail, and will compliment the new Vauxhall Cross Interchange. The existing tunnel is threatening and unwelcoming to the pedestrian. This refurbishment is being used to test methods and develop a series of 'lessons learnt' for the Light at the End of the Tunnel as a whole.



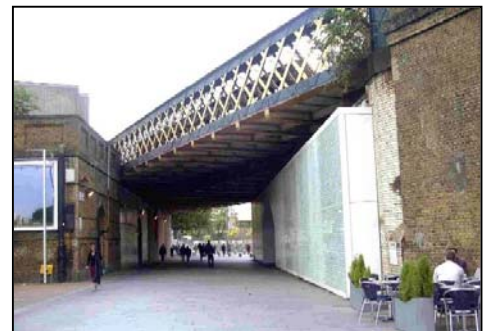
3.6 Vauxhall Cross Foot Tunnels

Refurbishment of the two foot tunnels at Vauxhall has been undertaken, and a series of public art panels commissioned from FreeForm Arts.



3.7 York Road/Waterloo Road/Cornwall Road

After the successful Sutton Walk project, the South Bank Employers Group have identified three more sites in the area as main thoroughfares; York Road, Waterloo Road and Cornwall Road. These will be subject to similar, though smaller-scale, 'artistic-intervention' types of improvements.



3.8 Southwark Street (E) & (W)

There are two parallel schemes proposed, which reflect the general split in responsibilities detailed elsewhere in this report:

- Environmental/Streetscape Improvements by TfL, and
- Bridge Structure Improvements by LB Southwark.

The **environmental/streetscape** scheme is due to start in June 2003, and is a complete refurbishment of this section of the TfL TLRN network. The scheme involves widening the footways to include for new paving, street trees and cycle parking. In addition new, upgraded street lighting and improved traffic signals systems will be incorporated to create a safer space for pedestrians.

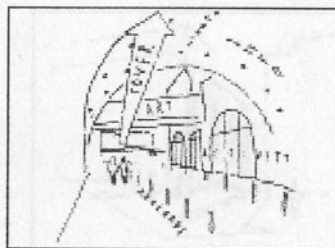
A new carriageway surface will be applied with improved road marking and crossing surfaces and will include for a variety of bus, taxi, and vehicle loading bays. Raised entry treatments will be incorporated along the route to create safer crossing at adjacent side roads

Bridge structure improvements are being paid for from the St. Christopher House S106 agreement.

3.9 Great Suffolk Street

The Richard Rogers Partnership were commissioned by Tate Modern to look at a creative vision for the future of Bankside. The final report, entitled "*Bankside Urban Study*" suggests that:

"The arches at the left turn into Great Suffolk Street could be a focal point for animation, including specialist lighting, public information and public art"



2 The Railway Arches

The arches at the left turn into Great Suffolk Street could be a focal point for animation including specialist lighting, public information and public art.

3.10 Brad Street/Wootton Street

A CRP/Spacia scheme is underway at Brad Street/Wootton Street, which will see 15 arches converted to retail, restaurant, leisure and office space uses. As well as providing much-needed local amenities, these are high-employment uses, with relatively large numbers of staff needed to service the gym and health club and proposed restaurant and coffee shop.



An agreement with an existing tenant, A&B Publishing, will see the retention of approximately 20 staff and possible expansion of the business. The overall scheme is predicted to create approximately 100 jobs, subject to the final uses of the site.

3.10 Others

Plans are currently being developed for improvements to **Millstream Road**, and **Blackfriars Road** – to be carried forward by LB Southwark, and at **Hatfields**, under the SBEG 'Art in Arches' project.

The Next Few Years

We have set out here thumbnail sketches of the current programme intentions of the partner organisations. These are subject to change and should not be read as definitive.

Better Bankside

Better Bankside operate as a Business Improvement District (BID). The organisation was responsible for the '401' artwork in Union Street, and the upgrade of Green Dragon Court in Borough Market. They are planning to become more involved in Light at the End of the tunnel

Lambeth Council

Lambeth Council is working with CRP on refurbishment of a number of tunnels. A specialist expertise is being developed as part of this programme. Lambeth have recently secured a PFI for lighting across the Borough, and will include lighting in the tunnels.

Network Rail

Network Rail are committed to a programme of pigeon proofing for the tunnels. **Spacia** – Network Rail's property arm are working with a number of the regeneration agencies on refurbishment programmes for commercially let arches adjacent to the tunnels.

Pool of London Partnership

The Pool of London Partnership are a business-led partnership responsible for an SRB 6 programme. They have commissioned a survey to report in March 2004, and have earmarked £850K for tunnel improvements up to 2007. PLP are working with LB Southwark, Spacia, Network Rail and CRP.

Southwark Council

Southwark Council is working with CRP on refurbishment programmes at Shand Street, Barnum Street, Millstream Road and Blackfriars Street. They are pursuing Section 106 negotiations to fund refurbishments at Southwark Street. Lighting-only improvements are being carried out at Newington Causeway.

Transport for London

TfL have made a three-year funding commitment to the tunnel refurbishment **Light at the End of the Tunnel** programme, up to 2006. They are taking the lead on tunnels within their road network, including for example South Lambeth Place, and lighting at Bermondsey Street. TfL regard the programme as an important part of their drive to make London one of the most walking friendly cities by 2015.

(See transcript of Ben Plowden's seminar presentation, on page 70).

Waterloo Project Board

The Waterloo Project Board is responsible for an SRB 6 programme in the Waterloo area. They have earmarked £250K for improvements to arches under the banner "Art in Arches", and are including York Road, Cornwall Road, Waterloo Road, Hercules Road, and Hatfields for consideration.

4. Tunnel Refurbishment: Estimated Costs

Case studies for three recently improved sites were analysed to arrive at unit costs for the typical elements of work needed (see pages 20-22). These unit costs were used to derive a rough-and-ready estimate of the costs for improvements at each of the remaining sites, based on the length of the tunnel, and the work needed as indicated by individual audits.

The estimates are based on standard repairs and do not deal with any special circumstances or projects. These might include special lighting, public art, creation of business/community floorspace and any traffic studies relating to the altering of existing traffic patterns.

The following assumptions were made:

- The figure supplied for the four case studies were accurate and indicative.
- When necessary, the cleaning and repainting of a single **steel parapet** is considered to be a fixed cost, independent of the length of the tunnel. We have used a figure of £5000.
- Similarly, the **licences** element is independent of the tunnel length.
- The rates supplied for cleaning a **brick arch** were originally in square metres – we have converted the sum to provide a rate per metre of road length - since this is the only data we have easily available.
- Likewise we have converted the figures for all the remaining elements of works: **cleaning and painting the soffit, cleaning the white-tiled sections, footway and carriageway re-surfacing, drainage, lighting, graffiti and pigeon treatment** costs are all based on a rate per metre of road length.

The **tunnel audits** (*Volume Two* of this report) were studied, and the details used to portray **what works would be needed at individual sites**. For example certain stretches of line are constructed entirely from brick arch, so there would need to be no white-tile cleaning or parapet re-painting at those sites. Other sites have recently been, or are currently in the process of being, refurbished, and so it is not necessary to consider a figure for improvements. Yet other sites have firm proposals for improvements. An **extraordinary items** cost has been included in certain cases, and this has been explained in the notes beneath the spreadsheet.

The following four tables contain the summaries of those estimated costs, arranged according to the four sections of line as they were audited:

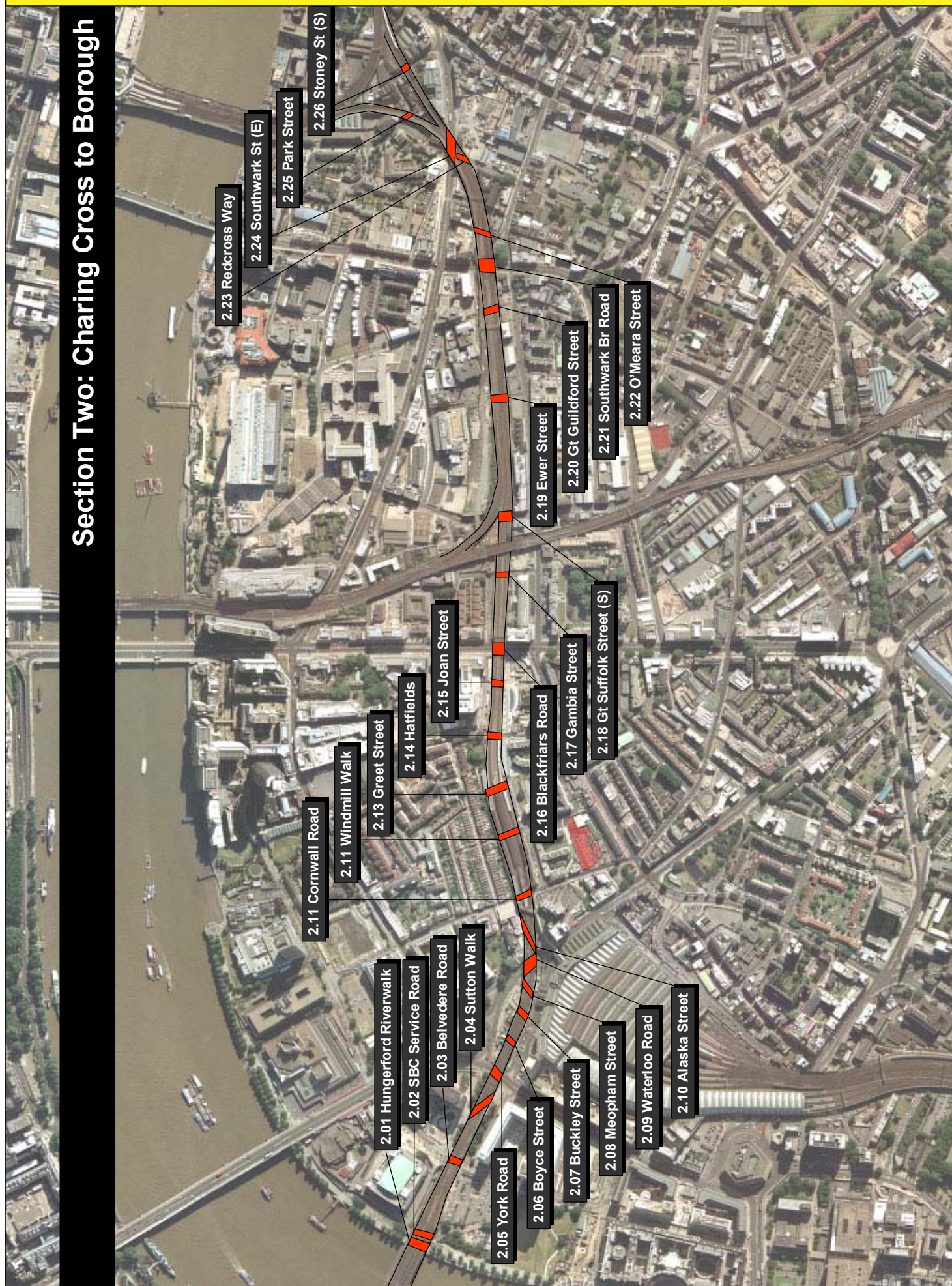
Section One:	Waterloo Mainline to Wandsworth Road
Section Two:	Charing Cross Mainline to Stoney Street
Section Three:	Cannon Street/London Bridge to Abbey Street
Section Four:	Blackfriars Mainline to Walworth Road

Maps have been provided alongside each table, indicating the location of each arch or tunnel within that particular stretch of railway line.

Section One: Waterloo to Vauxhall



Section Two: Charing Cross to Borough

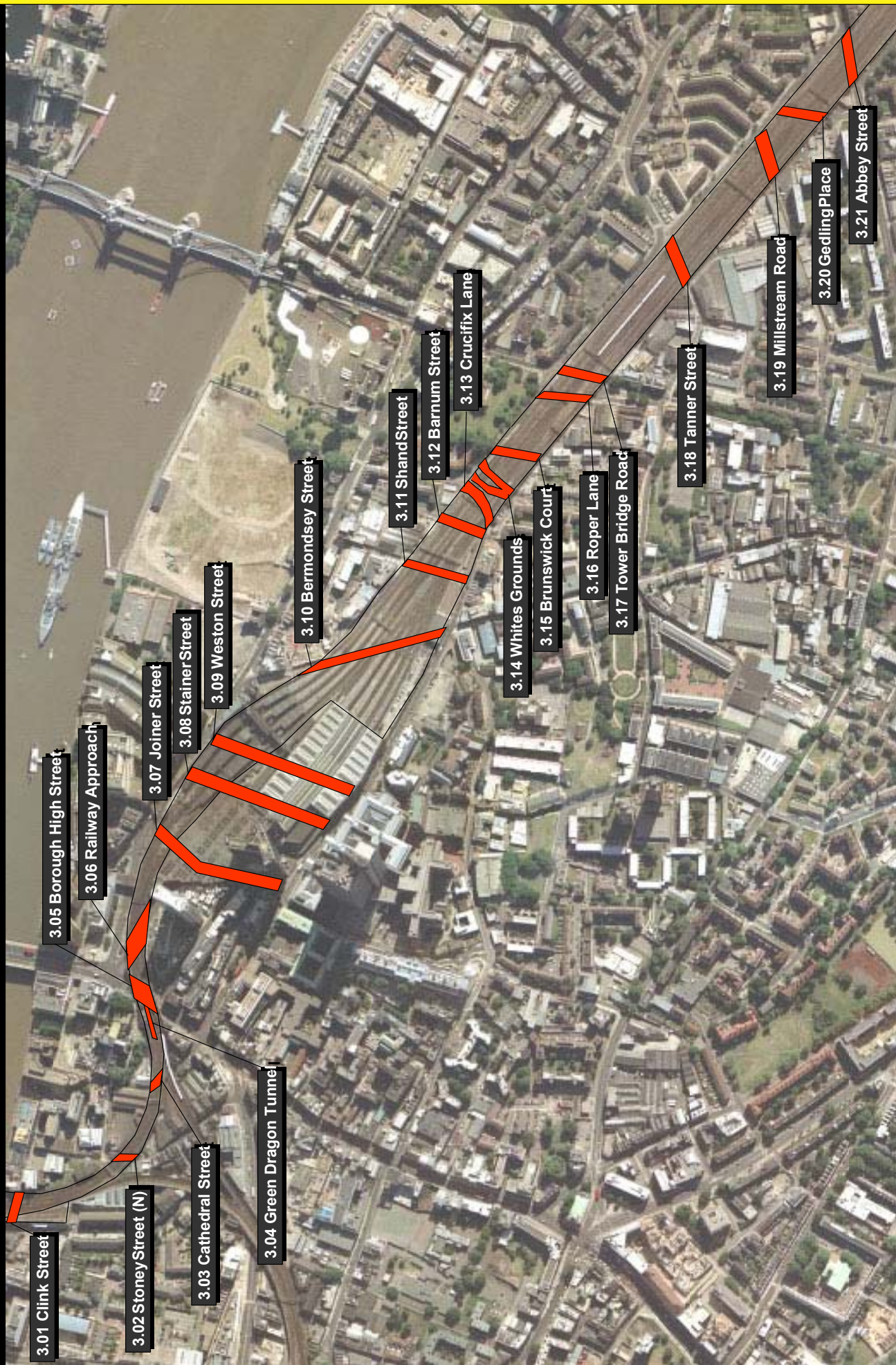


Estimated Costs
Section Two:
Charing Cross to Borough

[illegible]

Notes:	
Hungerford Riverwalk	Steel parapet both ends
SBC Service Road	£100k extraordinary item is to deal with public toilet
Belvedere Road	Steel parapet both ends
	Brick wall to one side only
Sutton Walk	Steel parapet both ends
York Road	£20k extraordinary item is to deal with redundant utilities boxes
Boyce Street	Recently refurbished, including public art intervention
Buckley Street	Steel parapet both ends
	Arch at both ends means no parapet/soffit to be painted
	Arch structure means no suitable ledges for pigeons - so no treatment necessary
	Recently resurfaced and re-lit
Mepham Street (arm)	Arch structure means no suitable ledges for pigeons - so no treatment necessary
Waterloo Road Mainline	£3k extraordinary item to deal with lamp column and doorway
Alaska Street	£100k extraordinary item is to cover extra costs due to bridging a very wide road at a steep angle. Also to renovate shop doorway
Corrwall Road	Very long steel parapet both ends
	Recently re-paved - so not needed
Windmill Walk	Steel parapet both ends
	£50k extraordinary item to cover treatment for bricked-up arches
Greet St	Steel parapet both ends
	Steel parapet both ends

Section Three: Cannon Street to Bermondsey



Section Four: Blackfriars to Elephant & Castle



Estimated Costs
Section Four:
Blackfriars to Elephant

[illegible]**Notes:**[illegible]

5. Ongoing Maintenance: Indicative Costs

Consultants were asked to look at the ongoing cyclical maintenance costs of one tunnel – **South Lambeth Place**. To that end they have provided the information below. This sets out the assumptions made, the maintenance strategies for the three main materials, comments on maintenance cycles, indicative costs based on the above, and finally, a rough ‘whole life’ costing summary.

5.1 Assumptions:

Maintenance strategies have been assumed for the three structural materials – steel, concrete and masonry. The maintenance of a structure can be undertaken in two fundamental ways:

Option 1 is to maximise routine and preventative maintenance, keeping the asset in good condition but at the expense of higher maintenance costs and disruption to the operational railway.

Option 2 is to avoid preventative maintenance and defer work to a later date whereby more involved maintenance/repair works would be required. This scenario minimises costs and work in the short-term but can increase the amount of major works required in the long-term.

Further variations could be undertaken, involving intervention activities which could prevent the condition from exceeding defined cost-effective thresholds.

The strategy adopted for this exercise has assumed that the less economical, routine and preventative maintenance regime is adopted which would maintain the ‘steady state’ condition of the structure throughout the 100 year cycle.

5.2 Maintenance Strategies:

Steel (Metal) Work

The majority of metal bridge decks/girders are dependent on protective treatment to resist the onset of corrosion. In turn, the life of the coating is influenced by the condition of the surface preparation, system used and location/environment of the structure. For the purposes of this report, the following assumptions in maintenance cycles for protective treatment, based on an urban environment located over highway, are:

Grit blasted metalwork (Sa2½)	15 years
Hand tool prepared metalwork (St3)	10 years

Concrete

Mass and reinforced concrete is prone to attack from chloride or carbonation. Once this damage reaches the reinforcement, corrosion will take place and the structural adequacy of the bridge will be affected. Early protection of the concrete can be offered by the application of either a saline coating/impregnation, or by an anti-carbonation coating (solutions for chloride or carbonation attack respectively). For the purposes of this Report, it has been assumed that this protective coating will be applied every 20 years.

Masonry

Typically, the degree of defects in the masonry are attributable to the location, exposure to the elements, control of vegetation growth and specific site environment (i.e. continuously wet brickwork). Maintenance works generally consist of selective re-pointing and masonry replacement to arrest any further deterioration, combined with routine vegetation control. Selective maintenance every 16 years is assumed to be applicable for this study.

5.3 Comments on Maintenance Cycles

No.	Description	Comments on level of maintenance cycle
1	Repoint brickwork	Say every 16yrs re-point of 20% of surface area (rake out depth of 2xjoint width + replace with lime mortar) Applicable to abutments & wingwalls.
2	Repaint structure	Assume that metal is grit blast prepared (Sa 2.5) to all exposed members (soffit and external elevations only) and full 'site applied' protective treatment system applied every 15 years.
3	Bearing replacement	Assume that metal bearing units for each main girder requires replacing every 60 years. Majority of the replacement works will be from the soffit, however, track possession during the main works (ie 28hr) will be required. Say 1 No. 28hr per bearing end (ie 2 No. possessions) NB not required for these works.
5	Clean Brick abutments	Anti graffiti treatment assumed applied. Jet washing of 20% of abutment areas assumed to be required every year.
6	Lighting	Cyclic maintenance of the street lighting incorporating complete electrical testing every 6 years (max), performance of lighting, checked on routine inspections every 28 days (summer) or 14 days (winter) and bulk lamp change and clean (depending on bulb type) due every 24 or 36 months.
8	Drainage/Cleaning of horizontal guttering.	The cleaning of drainage system to take place once a year.
9	Vegetation Removal to brickwork	To be included at 8 year intervals - remove fast growing tree roots etc.

5.4 Indicative Costs

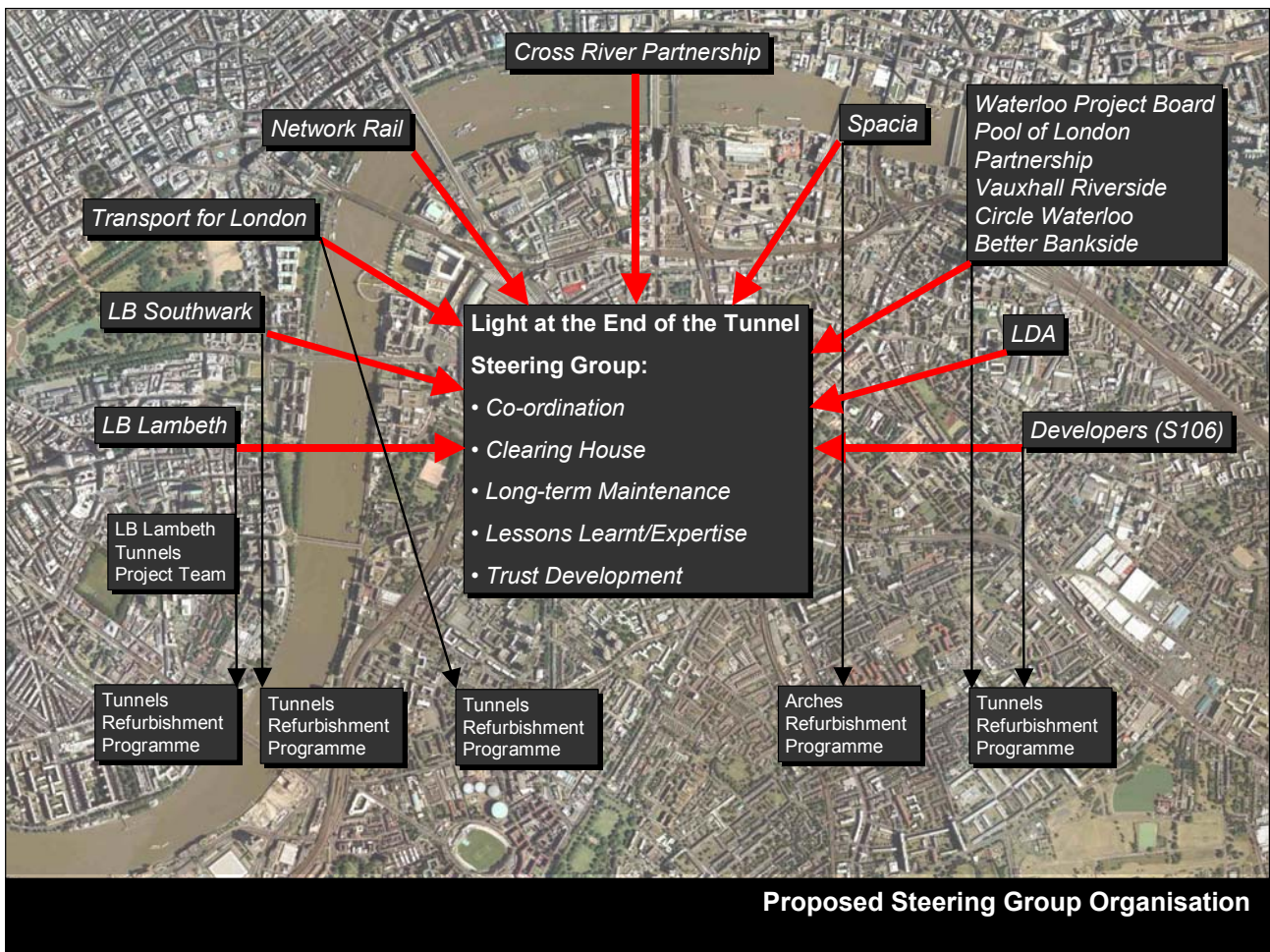
	Total Area	Percentage to be repaired	Cycle (years)	Indicative Rate (£)	Indicative Cost (£)
1 Repaint structure					
Total Surface Area of deck in mm2	5,795,513,906				
Total Area for a single protective coat in m2	5,800		15	35	203,000
2 Repoint Brickwork		30%	16		
Total Area of CE abutment in mm2	463,375,000				
Total Area of CE abutment in m2	463.375	109		59	6,341
Total Area of LE abutment in mm2	525,880,000				
Total Area of LE abutment in m2	525.88	157.76		59	9,307.84
3 Lighting (13 no. in total)					
Complete electrical testing			6 years (max)		915
Performance of lighting system			1 month		375
Bulk Lamp Change and Clean			3 years		1,975
4 Drainage (cleaning guttering)					
Cleaning of guttering, down pipes and hoppers			1 year	-	565

5.5 'Whole-Life' Costing Summary

Year	Maintenance		TOTAL	TOTAL inc VAT	NET TOTAL	Present value of £1 @ 6%	PRESENT VALUE	CUMULATIVE PRESENT VALUE
	Annual	Intermittent						
0	-	-	-	-	-	1.000	-	-
1	5,015	-	5,015	5,015	5,015	0.943	4,731.13	4,731.13
2	5,015	-	5,015	5,015	5,015	0.890	4,463.33	9,194.46
3	6,990	-	6,990	6,990	6,990	0.840	5,868.94	15,063.40
4	5,015	-	5,015	5,015	5,015	0.792	3,972.35	19,035.75
5	5,015	-	5,015	5,015	5,015	0.747	3,747.50	22,783.25
6	7,905	-	7,905	7,905	7,905	0.705	5,572.71	28,355.96
7	5,015	-	5,015	5,015	5,015	0.665	3,335.26	31,691.22
8	5,015	-	5,015	5,015	5,015	0.627	3,146.47	34,837.69
9	6,990	-	6,990	6,990	6,990	0.592	4,137.37	38,975.06
10	5,015	-	5,015	5,015	5,015	0.558	2,800.35	41,775.41
11	5,015	-	5,015	5,015	5,015	0.527	2,641.84	44,417.25
12	7,905	-	7,905	7,905	7,905	0.497	3,928.54	48,345.79
13	5,015	-	5,015	5,015	5,015	0.469	2,351.23	50,697.02
14	5,015	-	5,015	5,015	5,015	0.442	2,218.14	52,915.16
15	6,990	203,000	209,990	209,990	209,990	0.417	87,621.49	140,537.65
16	5,015	15,739	20,754	20,754	20,754	0.394	8,169.73	148,706.38
17	5,015	-	5,015	5,015	5,015	0.371	1,862.39	150,568.77
18	7,905	-	7,905	7,905	7,905	0.350	2,769.47	153,338.24
19	5,015	-	5,015	5,015	5,015	0.331	1,657.52	154,995.76
20	5,015	-	5,015	5,015	5,015	0.312	1,563.70	156,559.46
21	6,990	-	6,990	6,990	6,990	0.294	2,056.15	158,615.61
22	5,015	-	5,015	5,015	5,015	0.278	1,391.69	160,007.30
23	5,015	-	5,015	5,015	5,015	0.262	1,312.91	161,320.21
24	7,905	-	7,905	7,905	7,905	0.247	1,952.37	163,272.58
25	5,015	-	5,015	5,015	5,015	0.233	1,168.49	164,441.07
26	5,015	-	5,015	5,015	5,015	0.220	1,102.35	165,543.42
27	6,990	-	6,990	6,990	6,990	0.207	1,449.50	166,993.92
28	5,015	-	5,015	5,015	5,015	0.196	981.09	167,974.01
29	5,015	-	5,015	5,015	5,015	0.185	925.55	168,900.56
30	7,905	203,000	210,905	210,905	210,905	0.174	36,720.70	205,620.26
31	5,015	15,739	20,754	20,754	20,754	0.164	3,408.94	209,029.20
32	5,015	-	5,015	5,015	5,015	0.155	777.11	209,806.31
33	6,990	-	6,990	6,990	6,990	0.146	1,021.84	210,828.15
34	5,015	-	5,015	5,015	5,015	0.138	691.63	211,520.78
35	5,015	-	5,015	5,015	5,015	0.130	652.49	212,173.27
36	7,905	-	7,905	7,905	7,905	0.123	970.27	213,143.54
37	5,015	-	5,015	5,015	5,015	0.116	580.70	213,723.24
38	5,015	-	5,015	5,015	5,015	0.109	547.83	214,271.07
39	6,990	-	6,990	6,990	6,990	0.103	720.36	214,991.43
40	5,015	-	5,015	5,015	5,015	0.097	487.57	215,479.00
41	5,015	-	5,015	5,015	5,015	0.092	459.97	215,938.97
42	7,905	-	7,905	7,905	7,905	0.087	684.00	216,622.97
43	5,015	-	5,015	5,015	5,015	0.082	409.37	217,032.34
44	5,015	-	5,015	5,015	5,015	0.077	386.20	217,418.54
45	6,990	203,000	209,990	209,990	209,990	0.073	15,255.79	232,674.33
46	5,015	15,739	20,754	20,754	20,754	0.069	1,422.43	234,097.76
47	5,015	-	5,015	5,015	5,015	0.065	324.26	234,421.02
48	7,905	-	7,905	7,905	7,905	0.061	482.19	234,903.21
49	5,015	-	5,015	5,015	5,015	0.058	288.59	235,192.80
50	5,015	-	5,015	5,015	5,015	0.054	272.26	235,465.06
51	6,990	-	6,990	6,990	6,990	0.051	358.00	235,823.06
52	5,015	-	5,015	5,015	5,015	0.048	242.31	236,065.37
53	5,015	-	5,015	5,015	5,015	0.046	228.59	236,293.96
54	7,905	-	7,905	7,905	7,905	0.043	339.93	236,633.89
55	5,015	-	5,015	5,015	5,015	0.041	203.45	236,837.34
56	5,015	-	5,015	5,015	5,015	0.039	191.93	237,029.27
57	6,990	-	6,990	6,990	6,990	0.036	252.37	237,281.64
58	5,015	-	5,015	5,015	5,015	0.034	170.82	237,452.46
59	5,015	-	5,015	5,015	5,015	0.032	161.15	237,613.61
60	7,905	203,000	210,905	210,905	210,905	0.030	6,393.45	244,006.06
61	5,015	15,739	20,754	20,754	20,754	0.029	593.53	244,600.59
62	5,015	-	5,015	5,015	5,015	0.027	135.30	244,735.89
63	6,990	-	6,990	6,990	6,990	0.025	177.91	244,913.80
64	5,015	-	5,015	5,015	5,015	0.024	120.42	245,033.22
65	5,015	-	5,015	5,015	5,015	0.023	113.60	245,147.82
66	7,905	-	7,905	7,905	7,905	0.021	168.93	245,316.75
67	5,015	-	5,015	5,015	5,015	0.020	101.11	245,417.86
68	5,015	-	5,015	5,015	5,015	0.019	95.38	245,513.24
69	6,990	-	6,990	6,990	6,990	0.018	125.42	245,638.66
70	5,015	-	5,015	5,015	5,015	0.017	84.89	245,723.55
71	5,015	-	5,015	5,015	5,015	0.016	80.09	245,803.64
72	7,905	-	7,905	7,905	7,905	0.015	119.09	245,922.73
73	5,015	-	5,015	5,015	5,015	0.014	71.28	245,993.01
74	5,015	-	5,015	5,015	5,015	0.013	67.24	246,060.25
75	6,990	203,000	209,990	209,990	209,990	0.013	2,656.19	248,716.44
76	5,015	15,739	20,754	20,754	20,754	0.012	247.66	248,964.10
77	5,015	-	5,015	5,015	5,015	0.011	56.46	249,020.56
78	7,905	-	7,905	7,905	7,905	0.011	83.95	249,104.51
79	5,015	-	5,015	5,015	5,015	0.010	50.25	249,155.76
80	5,015	-	5,015	5,015	5,015	0.009	47.40	249,202.16
81	6,990	-	6,990	6,990	6,990	0.009	62.33	249,264.49
82	5,015	-	5,015	5,015	5,015	0.008	42.19	249,307.68
83	5,015	-	5,015	5,015	5,015	0.008	39.80	249,346.48
84	7,905	-	7,905	7,905	7,905	0.007	59.18	249,405.66
85	5,015	-	5,015	5,015	5,015	0.007	35.42	249,441.08
86	5,015	-	5,015	5,015	5,015	0.007	33.42	249,474.50
87	6,990	-	6,990	6,990	6,990	0.006	43.94	249,518.44
88	5,015	-	5,015	5,015	5,015	0.006	29.74	249,548.18
89	5,015	-	5,015	5,015	5,015	0.006	28.06	249,576.24
90	7,905	203,000	210,905	210,905	210,905	0.005	1,113.16	250,689.40
91	5,015	15,739	20,754	20,754	20,754	0.005	103.34	250,793.74
92	5,015	-	5,015	5,015	5,015	0.005	23.56	250,817.30
93	6,990	-	6,990	6,990	6,990	0.004	30.98	250,848.28
94	5,015	-	5,015	5,015	5,015	0.004	20.97	250,869.25
95	5,015	-	5,015	5,015	5,015	0.004	19.78	250,889.03
96	7,905	-	7,905	7,905	7,905	0.004	29.41	250,918.44
97	5,015	-	5,015	5,015	5,015	0.004	17.60	250,936.04
98	5,015	-	5,015	5,015	5,015	0.003	16.61	250,952.65
99	5,015	-	5,015	5,015	5,015	0.003	15.67	250,968.32
100	5,015	-	5,015	5,015	5,015	0.003	14.78	250,983.10
TOTAL PRESENT VALUE AT END OF INVESTMENT LIFE:							£ 250,982	

Proposed Steering Group Organisation

The idea of this steering group is to bring together all of the agencies with responsibilities for physical infrastructure, and those with regeneration skills, programmes and ideas. This group therefore provides an opportunity for pooling the lessons learnt from current programmes, and generating long-term solutions.



6. Implementation Plan

6.1 Overview

The plan set out here is designed to be inherently flexible. It ensures there is room for different agencies to carry forward individual initiatives but at the same time offers an overarching framework within and through which these initiatives can

- reap economies of scale
- tap into existing technical knowledge and relationships
- be made aware of best practice and innovation, including using artists
- ensure there is no wheel reinvention
- find funding partners.

The programme allows new tunnels to be brought forward when the opportunity arises, to ensure the overall programme is constantly rolling forward.

The plan ensures a cohesive approach is taken to the long-term maintenance of the tunnels, thereby maximising the impact of the current round of refurbishment financed through 'one-off' capital schemes via regeneration funding pots, Borough Spending Plans, and Section 106.

Important Note: *The programme that follows, while accurate at the time of printing, will be subject to change and should be regarded as indicative.*

6.2 Project Management

The diagram opposite sets out the proposed steering group organisation.

6.3 Tunnel Refurbishments

Individual tunnel refurbishment schemes will be the responsibility of the lead partner, usually the road 'owner', but also sometimes a regeneration agency. Lessons learnt (particularly technical) will be fed back into the Steering Group. The Group will also work to establish common 'branding' features, and identifying funding partners if these have not already been found. CRP will continue to devise generic project plans to be updated in light of 'lessons learnt'.

We have outlined below a year-on-year refurbishment programme, accurate at the date of printing. The status of each project is given in terms of the generic project management stages used by the Association of Project Management (APM). These will vary from project to project, but will broadly breakdown as described on the following page:

6.4 Project Management Stages:

STAGE 1: OPPORTUNITY IDENTIFICATION

- **Concept testing**
Includes demonstrating fit with policy objectives via a causal chain, surveying funding possibilities, scoping, possible partners, links to other projects etc.
- **Lead partner buy-in**
Identify and agree which agency will take overall control of the project.
- **Stakeholder/partner support**
Making sure all the parties with a 'stake' in the project understand what its about, and agree it is a good idea.
- **Information audit**
Trawl through relevant studies/reports etc to establish a baseline of data related to the project.
- **Operations and maintenance implications**
Lay out the full costs of operating and maintaining the project once it is completed.
- **Funding bids 1**
Submission of appraisals, application forms etc., to relevant bodies for feasibility finance.
- **Project Initiation**
Meeting of all key partners to 'initiate' the project and provide an overall direction, context and timescale.

STAGE 2: INITIAL DESIGN AND DEVELOPMENT

- **Preliminary designs**
Outline sketches etc giving 3D visualisation of the project
- **Stakeholder/partner support**
Reiteration of process shown in STAGE 1, this time with additional ££ and visual information
- **Safety Audit 1**
Initial test of project against statutory safety requirements
- **Consultation 1**
Presentation of project concept to appropriate public fora, and relevant media
- **Funding bids 2**
Submission of appraisals, application forms etc, to relevant bodies for project finance.
- **P.I's 'before' measurement**
Devise performance indicators based on causal chain methodology

STAGE 3: DETAILED DESIGN AND CONSULTATION

- **Detailed designs**
- **Safety audit 2**
- **Stakeholder/partner support**
- **Consultation 2**
- **Kick off meeting**

STAGE 4: IMPLEMENTATION

- **Procurement**
- **Progress meetings**
- **Monitoring (progress and ££) & reporting**
As required by funding bodies

STAGE 5: HAND-OVER

- **Operations and maintenance regimes**
- **PR opportunities**

STAGE 6: POST PROJECT EVALUATION

- **P.I's 'after' measurement**
- **Lessons learnt** (Identification at post project evaluation and 'wash-up' of lessons learnt which can be taken forward to improve delivery performance on future projects.)

6.5 Long-term Maintenance

Since the current maintenance regime is clearly inadequate, it is crucial to the Light at the End of the Tunnel programme that a long-term maintenance regime be established operating to a sustainable 'world-class' specification, based on reliable revenue streams. ***This is the most urgent task facing the steering group.*** There are two strands to this.

- First, agreeing a basic level of *co-ordinated* maintenance with the partner organisations.
- Second, establishing a **Trust** to manage the maintenance programme, capable of generating new revenue streams in partnership with Network Rail, Spacia, and Transport for London. This is an innovative route, and one that will take time to develop. However, we believe in the long-run this is the best way to proceed.

6.7 Refurbishment Programme 2003/04

Tunnel Name	Estimated Annual Pedestrian Usage	Cost Estimate	Partners (Operational)	Lead Partner	Partners (Funding)	Comments (November 2003)
South Lambeth Place	1million	Works Underway	TfL CRP LB Lambeth Network Rail	Transport for London	CRP BSP 03/04 CRP – SRB 6 Section 106 Network Rail TfL	Currently at STAGE 4 – IMPLEMENTATION.
Vauxhall South Interchange Foot Tunnels	1.3 million	Works Underway	TfL CRP	Transport for London	CRP TfL	Currently at STAGE 4 – IMPLEMENTATION.
Vauxhall North Interchange Foot Tunnels	625,000	Works Underway	TfL CRP	Transport for London	CRP TfL	Currently at STAGE 4 – IMPLEMENTATION.
Boyce Street	290,000	£66k	TfL LB Lambeth	Transport for London	TfL	Currently at STAGE 2 – INITIAL DESIGN & DEVELOPMENT (part of interim bus stand project)
Buckley Street	2 million	£50k	TfL LB Lambeth	Transport for London	TfL	Currently at STAGE 2 – INITIAL DESIGN & DEVELOPMENT (part of interim bus stand project)
Mepham Street	29,000	£153k	TfL LB Lambeth	Transport for London	TfL	Currently at STAGE 2 – INITIAL DESIGN & DEVELOPMENT (part of interim bus stand project)
Southwark Street West	1.2 million	£448k	LB Southwark TfL Network Rail	LB Southwark	Section 106	Currently at STAGE 3 – DETAILED DESIGN. Targeted for completion by March '04.
Southwark Street East	2.5 million	£353k	LB Southwark TfL Network Rail	LB Southwark	Section 106	Currently at STAGE 3 – DETAILED DESIGN. Targeted for completion by March '04.
Carlisle Lane (S)	146,000	£120k	CRP LB Lambeth Developer Network Rail	LB Lambeth	Section 106	Currently at STAGE 2 – INITIAL DESIGN & DEVELOPMENT. Section 106 in negotiation.
Black Prince Road	537,000	£124k	LB Lambeth CRP Vauxhall Riverside	LB Lambeth	Section 106	Currently at STAGE 2 – INITIAL DESIGN & DEVELOPMENT. Artistic intervention being considered. Section 106 agreed
Stainer Street - <i>lighting only</i>	178,000	£30k	LB Southwark TfL	LB Southwark	LB Southwark Pool of London Partnership Network Rail	For implementation in 2003/04 as part of PLP draft implementation plan.
Weston Street - <i>lighting only</i>	366,000	£30k	LB Southwark TfL	LB Southwark	LB Southwark Pool of London Partnership Network Rail	For implementation in 2003/04 as part of PLP draft implementation plan.

6.7 Refurbishment Programme 2003/04 cont..

Tunnel Name	Estimated Annual Pedestrian Usage	Cost Estimate	Partners (Operational)	Lead Partner	Partners (Funding)	Comments (November 2003)
Shand Street	43,000	£228k	LB Southwark CRP	LB Southwark	LB Southwark (lighting only) CRP	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION PLP Priority C
Barnum Street	76,500	£166k	LB Southwark CRP	LB Southwark	LB Southwark (lighting only) CRP	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION PLP Priority A
Millstream Road	69,000	£309k	LB Southwark CRP	LB Southwark	LB Southwark (lighting only) CRP	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION PLP Priority B

6.8 Refurbishment Programme 2004/05

Tunnel Name	Estimated Annual Pedestrian Usage	Cost Estimate	Partners (Operational)	Lead Partner	Partners (Funding)	Comments (November 2003)
Salamanca Street	600,000	£145k	LB Lambeth CRP Vauxhall Riverside	LB Lambeth	Section 106	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION Artistic intervention being considered. Section 106 agreed.
Blackfriars Road	2.8 million	£243k	LB Southwark CRP TfL	LB Southwark	TfL LB Southwark CRP BSP 04/05 WPB SRB 6 Network Rail	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Ewer Street	124,000	£245k	LB Southwark CRP	LB Southwark	CRP BSP 04/05 Network Rail	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION.
Bermondsey Street	534,000	£750k	LB Southwark CRP TfL More London	TfL	More London TfL LB Southwark Network Rail	Currently at STAGE 2 – INITIAL DESIGN & DEVELOPMENT PLP Priority A
Waterloo Road	3.6 million	£267k	TfL CRP LB Lambeth Network Rail SBEG	SBEG	CRP BSP 04/05 WPB – SRB 6 Section 106 Network Rail	Currently at STAGE 2 – INITIAL DESIGN & DEVELOPMENT.
Cornwall Road	3.4 million	£125k	CRP LB Lambeth Network Rail SBEG	SBEG	WPB – SRB 6 Network Rail	Currently at STAGE 2 – INITIAL DESIGN & DEVELOPMENT.
Hatfields	500,000	£125k		LB Lambeth	WPB – SRB 6	Currently at STAGE 2 – INITIAL DESIGN & DEVELOPMENT. Funding agreed by Waterloo Project Board
Virgil Street	82,000	£294k	CRP LB Lambeth Network Rail	LB Lambeth	CRP BSP 04/05 WPB – SRB 6 Network Rail	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION.
Leake Street	630,000	£776k	CRP LB Lambeth Developer Network Rail	LB Lambeth	Section 106	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION. Section 106 agreed.
Tinworth Street	657,000	£117k	CRP LB Lambeth Network Rail Developer	LB Lambeth	Section 106	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION. Section 106 in negotiation.

6.9 Refurbishment Programme 2005/08 (Priorities to be Confirmed)

Tunnel Name	Estimated Annual Pedestrian Usage	Cost Estimate	Partners (Operational)	Lead Partner	Partners (Funding)	Comments (November 2003)
Westminster Bridge Road	1.2 million	£1.5M	CRP LB Lambeth Developer Network Rail	LB Lambeth	Section 106	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION. Section 106 agreed, but development delayed.
Carlisle Lane (N)	378,000	£525k	CRP LB Lambeth Developer Network Rail	LB Lambeth	Section 106	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION. Section 106 in negotiation.
Upper Marsh	1.1 million	£280k	CRP LB Lambeth Developer Network Rail	LB Lambeth	Section 106	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION. Section 106 in negotiation.
Old Paradise Street	137,000	£190k	CRP LB Lambeth Developer Network Rail	LB Lambeth	CRP BSP 05/06	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION.
Centaur Street	175,000	£371k	CRP LB Lambeth Network Rail	LB Lambeth	CRP BSP 05/06 WPB – SRB 6	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION.
Hungerford Riverwalk	3.5 million	£265k	CRP LB Lambeth Network Rail South Bank Centre	South Bank Centre	Section 106	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION.
SBC Service Road	752,000	£180k	CRP LB Lambeth Network Rail South Bank Centre	South Bank Centre	Section 106	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION.
Belvedere Road	1.4 million	£142k	CRP LB Lambeth Network Rail South Bank Centre	LB Lambeth	Section 106	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION.
Lambeth Road	585,000	£278k	CRP LB Lambeth Network Rail	LB Lambeth	To be confirmed	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION.
Sail Street	87,000	£117k	CRP LB Lambeth Network Rail	LB Lambeth	To be confirmed	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION.
Juxon Street	108,000	£117k	CRP LB Lambeth Network Rail	LB Lambeth	To be confirmed	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION.
Whitgift Street	186,000	£117k	CRP LB Lambeth Network Rail	LB Lambeth	To be confirmed	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION.

6.9 Refurbishment Programme 2005/08 cont..

Tunnel Name	Estimated Annual Pedestrian Usage	Cost Estimate	Partners (Operational)	Lead Partner	Partners (Funding)	Comments (November 2003)
Glasshouse Walk	255,000	£128k	CRP LB Lambeth Network Rail	LB Lambeth	To be confirmed.	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION.
New Spring Gardens Walk	140,000	£117k	CRP LB Lambeth Network Rail	LB Lambeth	To be confirmed.	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION.
Kennington Lane	14,000	£500k	CRP LB Lambeth Network Rail TfL	TfL	TfL To be confirmed	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION.
Parry Street	320,000	£235k	CRP LB Lambeth Network Rail TfL	TfL	TfL To be confirmed	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION.
Miles Street	261,000	£138k	CRP LB Lambeth Network Rail TfL	TfL	TfL To be confirmed	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION.
York Road	1.6 million	£130k	CRP TfL Network Rail SBEG	TfL	TfL To be confirmed	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION.
Alaska Street	195,000	£275k	To be confirmed	LB Lambeth	To be confirmed	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Windmill Walk	137,000	£240k	To be confirmed	LB Lambeth	To be confirmed	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Greet Street	16,000	£185k	To be confirmed	LB Lambeth	To be confirmed	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Joan Street	271,000	£77k	To be confirmed	LB Southwark	To be confirmed	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Gambia Street	142,000	£115k	To be confirmed	LB Southwark	To be confirmed	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Gt Suffolk Street South	865,000	£70k	To be confirmed	LB Southwark	To be confirmed.	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Gt Guildford Street	262,000	£272k	To be confirmed	LB Southwark	To be confirmed	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Southwark Bridge Road	888,000	£295k	To be confirmed	LB Southwark	To be confirmed	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Redcross Way	320,000	£93k	To be confirmed	LB Southwark	To be confirmed	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Southwark Street East	2.4 million	£355k	To be confirmed	LB Southwark	To be confirmed	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Park Street	1.9 million	£90k	To be confirmed.	LB Southwark	To be confirmed.	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION

6.9 Refurbishment Programme 2005/08 cont..

Tunnel Name	Estimated Annual Pedestrian Usage	Cost Estimate	Partners (Operational)	Lead Partner	Partners (Funding)	Comments (November 2003)
Stoney Street (S)	3.4 million	£66k	To be confirmed.	LB Southwark	To be confirmed.	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Stoney Street (N)	1 million	£82k	To be confirmed.	LB Southwark	To be confirmed.	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Cathedral Street	1.4 million	£210k	To be confirmed.	LB Southwark	To be confirmed.	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Borough High Street	4.5 million	£475k	To be confirmed.	LB Southwark	To be confirmed.	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Railway Approach	2.5 million	£425k	To be confirmed.	LB Southwark	To be confirmed.	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Joiner Street	8.7 million	Completed	To be confirmed.	LB Southwark	To be confirmed.	
Stainer Street - excluding lighting	178,000	£628k	LB Southwark TfL	LB Southwark	LB Southwark Pool of London Partnership Network Rail	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION PLP Priority C
Weston Street - excluding lighting	366,000	£700k	LB Southwark TfL	LB Southwark	LB Southwark Pool of London Partnership Network Rail	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION PLP Priority C
Crucifix Lane	262,000	£250k	Pool of London Partnership	LB Southwark	Pool of London Partnership	PLP Priority A Project Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Whites Grounds	243,000	£446k	Pool of London Partnership	LB Southwark	Pool of London Partnership	PLP Priority A Project Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Roper Lane	66,000	£240k	To be confirmed.	LB Southwark	To be confirmed.	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Tower Bridge Road	950,000	£337k	To be confirmed.	LB Southwark	To be confirmed.	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Tanner Street	217,000	£230k	Pool of London Partnership	LB Southwark	Pool of London Partnership	PLP Priority B Project Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Abbey Street	372,000	£454k	To be confirmed.	LB Southwark	To be confirmed.	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Hopton Street	5.3 million	£82k	To be confirmed.	LB Southwark	To be confirmed.	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Southwark Street West	1.2 million	£450k	To be confirmed.	LB Southwark	To be confirmed.	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Burrell Street	580,000	£88k	To be confirmed.	LB Southwark	To be confirmed.	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION
Treveris Street	317,000	£90k	To be confirmed.	LB Southwark	To be confirmed.	Currently at STAGE 1 – OPPORTUNITY IDENTIFICATION

7. Monitoring and Evaluation

CRP will be monitoring this programme closely through the following indices:

1. Usage

CRP have undertaken a cost-effective usage audit of all the 90 tunnels in the LSC area. The full results of this work appear in Volume Three of this report. This baseline will be used to monitor usage 'before and after' improvements are made. A full count will be conducted in September 2005 for direct comparison with the 'before' counts carried out in August/September 2003.

2. Attitudes/Perception

The body of evidence gathered by the regeneration agencies through MORI surveys etc, and relating directly to the viaduct as an 'unsafe barrier', will be collated to create a second 'perception' baseline. An attitudinal survey will be carried out on the completion of both the first and second tranches of improvements (Nov 2004, and Nov 2005) to measure changes in perceptions of the public space adjacent to the viaduct.

3. Employment

CRP will work closely with Spacia to track the changes in total numbers employed in the 1000 arches currently available to let in the LSC area.

4. Crime

CRP will work with the Metropolitan Police to measure changes in crime levels, and perceptions of crime.

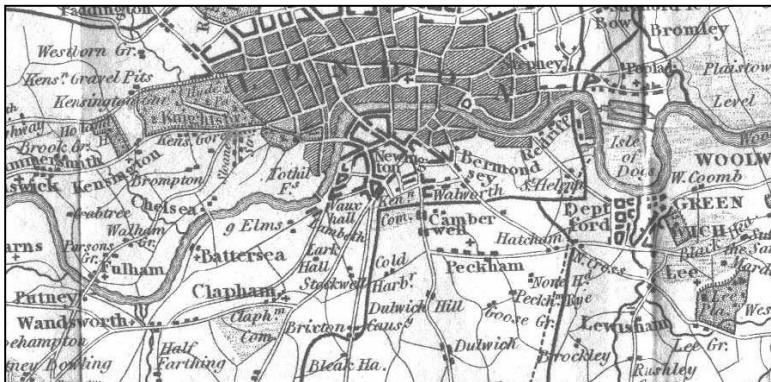
5. Roll-out

This initiative could subsequently be rolled-out as best practise; or we could produce a design guide for the other areas of London/Nationally. CRP regard the level of roll-out of best practice, and in particular the lessons learnt from the Light at the End of the Tunnel partnership process, as a critical success factor.

8. Background Information

8.1 Historical Background

8.1.1 From Ancient Landscape to Industrial Heartland



When a town first appeared on the northern gravel bank of the Thames, the south side was an almost uninhabitable marsh, broken by ponds, ditches, and channels, mostly covered by the tide as far as the low heights of Denmark Hill, Brixton Rise and Lavender Hill. The names Bermondsey and Battersea suggest islets on the amphibious shore. The first inhabitants of this shore might have been

fishermen or outlaws, who would prey on the passing traffic. There would have been some sort of road across the marsh, and a clue to this survives in the name Newington Causeway.

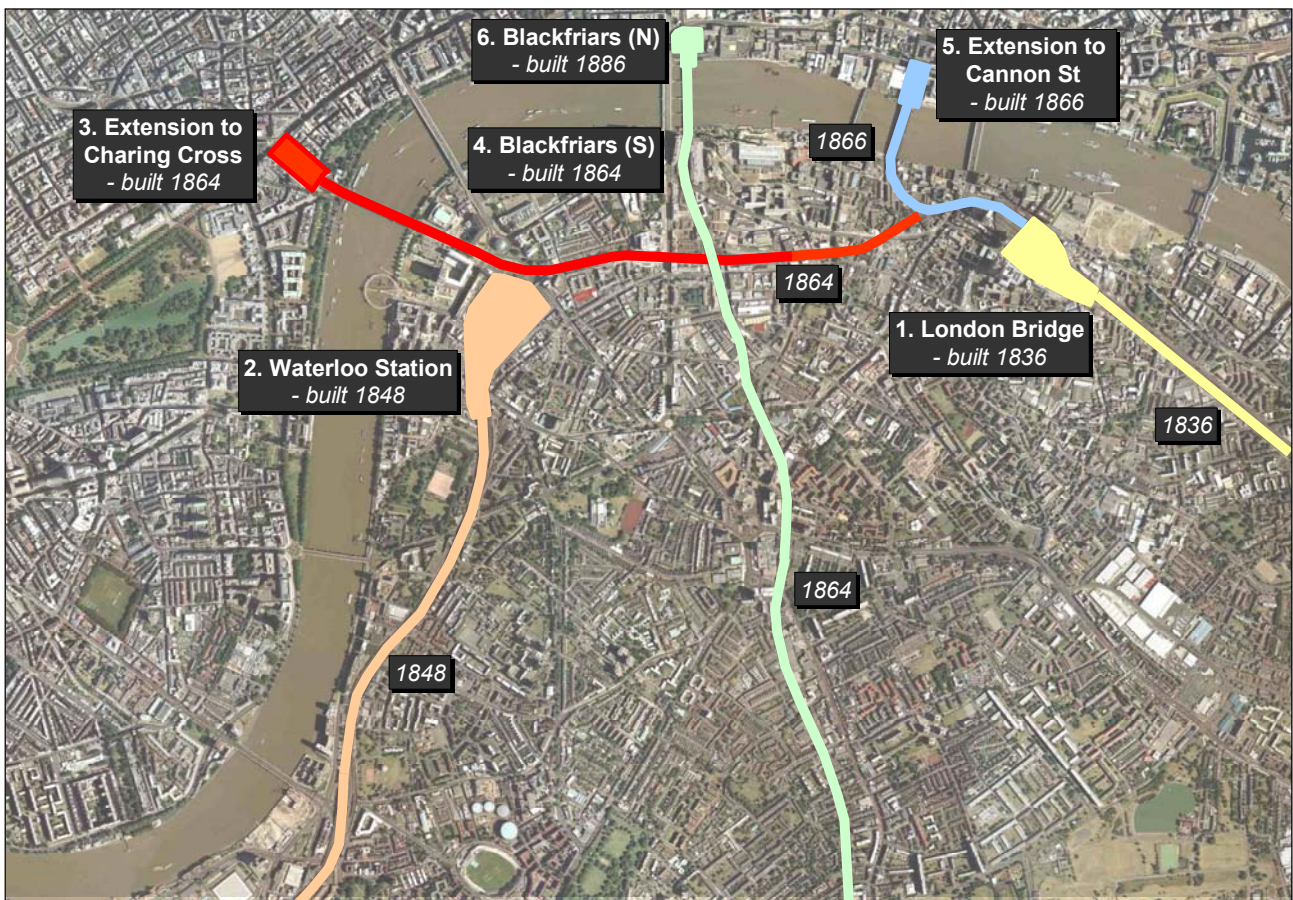
From the Middle Ages, artificial banks and causeways were constructed in Lambeth and Southwark to allow crossings of the flooded low-lands and to hold back the Thames. The most important of these causeways were Bankside, The Broad Wall and The Narrow Wall. Once the river had been successfully pushed back, the causeways became roads, and The Narrow Wall remained, changing its name to Upper Ground Street (also because of its causeway origin) in 1787. The Broad Wall was a neighbouring street, becoming Broadwall in 1881.

In the eighteenth century industry began to develop in the South Bank area. Some needed the Marsh's fresh water supply (for brewing or cloth bleaching); others exploited the cheap land and river access to move or store their bulk goods (limestone, scrap iron and wood). Improved access from the new Westminster and Blackfriars bridges, combined with the need for labour led to a population explosion in the once-quiet village as thousands flocked to the South Bank to work on the coal wharves, timber yards, potteries, dye works, lime kilns, blacking factories and printing houses. The growth of industry was one of the key components in Lambeth's transformation from a rural haven into a centre of industry; the other was the railway.



Historical Development of the Railway Lines

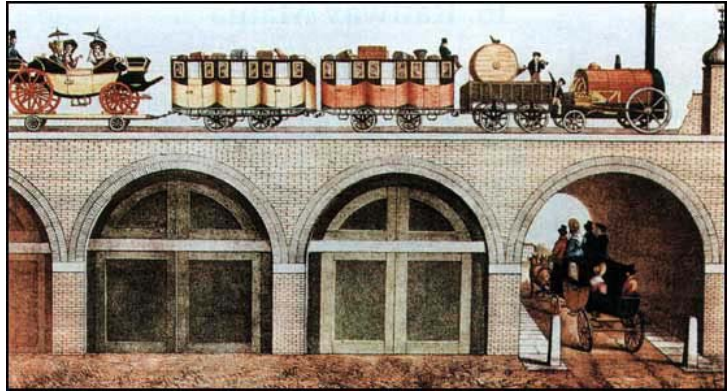
Since its arrival the Railway has dominated the area, dividing it from the river and isolating communities from the waterfront. With powers of compulsory purchase, the railway companies were free to demolish anything to increase their railway lines and termini. The vast number of steam trains running from the Station (as many as 700 a day by the end of the nineteenth century) polluted the local air, already choked by two centuries of industry, with thick smog.



Historical Development of the Railway Lines
1836-1886

8.1.2 Development of the Main Stations

London Bridge is the oldest station in London, first opened in **1836**. The line was built on a viaduct consisting of 978 arches, from London Bridge to Greenwich. Unlike other railways at the time, the London & Greenwich was built specifically for passenger traffic. Although the original survey suggested that the four-mile railway would cost £400,000, by the time Greenwich Station was finished in 1840, the total sum spent was nearly £1 million.



Waterloo Station was the second to be built in the area, opened by the London & South Western Railway on 11 July **1848**. It is the UK's largest station, now covering an area of 24.5 acres. One of the most notable features of the station is the Victory Arch (pictured, right), in Portland Stone, which commemorates the London and South Western and the Southern Railway men who gave their lives in the First and Second World Wars.



Charing Cross was opened in **1864**. The station was a result of the Southern Eastern Railway's need to extend westwards from London Bridge, getting it's Kent passengers right into Central London. Situated on the forecourt of the station stands the Eleanor Cross, which is the point from which Britain measures it's road distances. Queen Eleanor was the wife of Edward I and the cross is one of many erected at the points on the journey where her body had rested on its way from Lincoln to Westminster for burial.

The original **Blackfriars Station** also opened in **1864**, and was built on the south side of the Thames as the terminus of the London, Chatham and Dover Railway. It was not until 1886, following construction of the rail bridge across the river, that a station on the north side was opened, and the original station closed. The new station was named St. Paul's, becoming Blackfriars in 1937.



The original **Cannon Street Station** and bridge were built in **1865** for South East Railways. The up-stream side was opened to the public as a footbridge on payment of a toll between 1872 and 1877. The illustration on the left shows the station and Alexandra Bridge (as it is correctly called) from 1870.

8.1.3 Ragged Schools in Railway Arches

Ragged Schools were charitable schools dedicated to the free education of destitute children. Working in the poorest districts, teachers (often local working people) initially used such buildings as could be afforded - stables, lofts and railway arches.

Charles Dickens wrote in a newspaper article at the time:

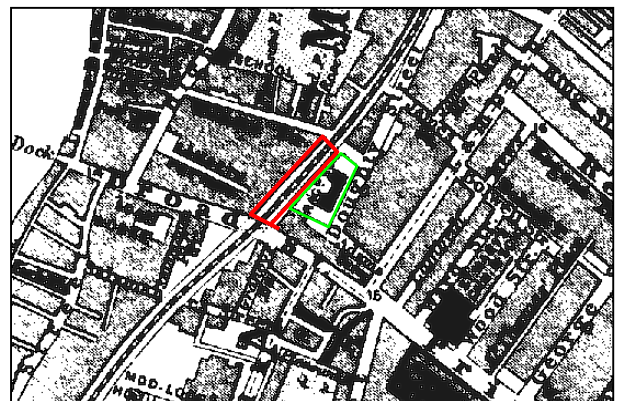
"The name implies the purpose. They who are too ragged, wretched, filthy, and forlorn, to enter any other place: who could gain admission into no charity school, and who would be driven from any church door; are invited to come in here, and find some people not depraved, willing to teach them and show them some sympathy, and stretch a hand out, which is not the iron hand of Law, for their correction."
(The Daily News, 1852)



Henry Beaufoy, a successful vinegar distiller, built a ragged school at Doughty Street, Lambeth Walk in 1851, "in recognition of his wife's interest in the earlier school in the railway arches behind it". This illustration shows the school on completion, arches visible behind it. Doughty Street has now been renamed Newport Street, and the south wing still exists as the Beaconsfield Art Gallery. A view of the same site before construction can be seen in the illustration on page one of this report.

The 1851 school is actually marked on this 1862 map (marked green), in front of the arches (red) – which indicates that the original ragged school was held in one of the arches between Black Prince Road and Whitgift Street.

It is estimated that around 300,000 children went through the London Ragged Schools alone between the early 1840s and 1881.



8.1.4 Of Architectural Interest:



Many of the arches have fine architectural features, such as this elaborate decorative brickwork at **Shand Street**. This is typical of the tunnels beneath London Bridge Station.



Approximately half the arches studied lie in or adjacent to a conservation area, and this tunnel at **Abbey Street**, with its pillared collonade, is a listed structure.



This ornate parapet is at **Lambeth Road**.



Taken as a whole, the viaduct forms the single largest structure in the London South Central area

8.2 Policy Context

8.2.1 The Lambeth Plan Deposit 2002-2017 – Area and Site Policies

5.15 Vauxhall

Policy 69 - Vauxhall Cross Transport Hub states that *“Developments in the area are required to improve pedestrian routes and crossing points so that they can be accessed easily”*.

Policy 71 - Use of Arches in Vauxhall: *“The use of former railway arches for active frontage uses is permitted in and around Vauxhall Cross”*.

Paragraph 5.15.6 states: *“The conversion of a number of the arches has been a great success and there is further opportunity to create many more active frontages by opening up the arches for uses including community facilities northwards to Black Prince Road – providing overlooking of Pedlars Park and Spring Grove, as well as under the South Lambeth Place viaduct”*.

Policy 72 - Spring Gardens: *“The improvements and extension of Spring Gardens (through road removal) will be pursued, including through the removal of the mounding, and better links through railway arches”*.

5.16 Waterloo

Policy 74 - Transport in Waterloo (B): *“Footway capacity will be increased...”*

Policy 74 (D): *“Major Development should include full proposals for servicing (including consideration of alternatives) compatible with the pedestrian safety and priority”*.

Policy 74 (E): *“A distribution of planning obligations will be secured, triggered by phased implementation, to overcome problems that could otherwise restrict the potential of developers.”*

Policy 75 - Urban Design and the Character of Waterloo (B): *“A railway zone effectively separates the riverside area from the hinterland – with a dense wall of viaduct, bridges and stations.”*

Policy 75 (C): *“Where they need to be kept, raised walkways, subways and paths, and viaduct roads under the railway should be made safer, better-lit and more inviting, including increased active frontage uses facing onto them, and increased activity at street level”*.

Policy 75 (D): *“Dead frontages and amorphous and left-over spaces and car parks between major buildings will be improved, and should be removed prior to development”*.

Policy 78 – Use of Arches in Waterloo: *“In Waterloo (north of Lambeth Road), conversion of arches to active frontage uses is permitted providing every effort is made to re-house small businesses locally, and a variety of small business premises is provided on sections of arches. Loss from parking use is permitted”*

MDO 118 – One Westminster Bridge Road (County Hall Island Block/Ellington Street): *“Improvements to viaduct roads”*

MDO 120 – York and Beckett House: *“Improvements to viaduct roads”*

MDO 121 – Royal Street/Upper Marsh (Founders Place): *“Improvements to viaduct roads”*.

MDO 123 – 6 Hercules Road/123 Westminster Bridge Road: *“Improvements to viaduct roads”*.

MDO 124 – 111/141 Westminster Bridge Road: *“Creative utilisation of space under the arches with active frontage use”*.

Additionally, the following policy has been proposed, and is under consideration by Lambeth's UDP working group, as of 12 November 2003:

Policy 23a – Use of Railway Arches

Railway arches in industrial use are protected for such uses unless they are proven to be causing significant detriment to residential amenity and/or adverse impact on the highways network. If this is the case, every effort should be made to re-locate those uses to a suitable site locally and to re-introduce more appropriate employment (including industrial) uses.

For vacant arches, and where it is demonstrated that existing arches are no longer suitable for continued employment use, a number of uses, including active frontage uses, may also be acceptable, subject to the Plan's other policies. A variety of small business premises and uses should wherever possible be provided on groups of arches.

In the Central London Policy Area, town centres and in relevant Major Development Opportunity sites, a more flexible approach towards the use and re-use of railway arches will be adopted. In these areas, the change of use to active frontage uses is encouraged, provided:

- (i) this will assist in the achievement of the Council's regeneration objectives, and
- (ii) the change of use would not result in the loss of any existing significant employment generating use that is appropriately located.

Proposals to use railway arches for parking use will generally be resisted. Change of use from parking use is permitted.

Supporting text for Policy 23a

1. Lambeth contains a number of railways arches, but they are nevertheless a finite and scarce resource. Many of them provide relatively cheap, flexible accommodation for a range of activities which play an essential role in the functioning of the local economy, but which are environmentally intrusive, such as scrap yards and car repair premises. They often pose particular parking needs and become 'bad neighbour' uses because of this and the environmental nuisance they can create. This is however an important business area for socially excluded communities and these activities provide much needed local services.

2. Arches are increasingly being targeted for more profitable and active uses, particularly around the edges of town centres. The intention of this policy is to seek to retain railway arches in industrial use where they are located away from residential areas, or where disturbance to amenity can be minimised. Arches that are used for other, nonindustrial, uses but which play an important role within the borough (such as supporting major arts facilities) are also protected, and, when no longer required for these uses, will become subject to the requirements of this policy.

3. In certain locations, railway arches can very successfully contribute to the regeneration and visual improvement of town centre and edge-of-centre locations, through accommodating active frontage uses. The policy allows such changes of use to be considered. Uses within the A1, A2, A3, D1 and D2 use classes may all be appropriate. Similarly, the policy would allow for a change of use of an arch from industrial use if it can be demonstrated that it is no longer suitable for continued employment use. Criteria (i) and (ii) of Policy 23 will be applied in this assessment. These criteria require a justification for loss of employment use either in terms of environmental, access and adjoining site relationship problems or through a demonstration of vacancy and a marketing campaign for continued employment use.

8.2.2 The Southwark Unitary Development Plan Deposit – Area Proposals

3.2 London Bridge Station

3.2.2 The following planning principles should be prioritised for the London Bridge Station Area:

“....ii) “To secure improvements through the development process to public transport to increase capacity and promote ease of use for all groups including people with a mobility disability

....v) To improve the environment, especially the public realm and pedestrian environment”

....viii) To create pedestrian routes which offer more interest and clarity to pedestrians in a logical and cohesive network of walkways”

3.2.4 Planning briefs for the London Bridge Station and railway track should take into account of the following specific principles:

- *“Extensive public realm improvements are required within the station and to provide links to the surrounding area*
- *Active edges to streets should be created to improve the quality of the public realm and enhance the character of the area”*

3.3 London Bridge Riverside

3.3.2 The following planning principles should be prioritised for the London Bridge Riverside:

- *“.....Encouraging and facilitating the use of the riverside for tourism and recreational purposes*
- *.....Improving the framework of routes and open spaces for leisure and access through the area*
- *Integration of public art into developments”*

3.3.3 “There are several key sites within London Bridge Riverside that require more detailed planning guidance to ensure that they meet the general planning principles above, which include the Potters Fields, Lambeth College and the Corporation of London Sites. These sites require exceptional developments as they will be providing a backdrop to the Tower Bridge World Heritage Site and also City Hall”

3.3.4 The following principles should be prioritised:

“.....ii) Providing a tourism and community use, particularly those relating to arts and culture, in line with the vision of this area as a tourist attraction”

8.2.3 Mayor's Draft London Plan

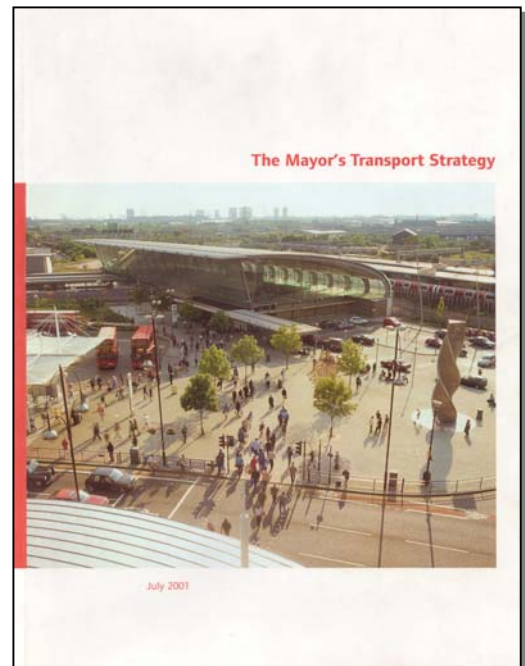
The Mayor's Draft London Plan (June 2002) identifies six *Opportunity Areas* under **policy 2B.3**. Four of these fall within the London South Central area; Waterloo, London Bridge, Elephant & Castle and Vauxhall/Battersea.

- Under paragraph **2B.21 (London Bridge)**, it proposes the *"redevelopment of London Bridge station and it's environs" and "better pedestrian integration with the surrounding area"*
- **2B.22 (Waterloo)** states that *"particular attention should be paid to removing barriers to pedestrian movement.....and creating a more attractive and safe environment"*
- **2B.23 (Vauxhall):** *"...easier pedestrian movement and major environmental improvements...should create a stronger sense of local identity and increase housing and commercial capacity". It goes on to say that development further West should be "...supported by effective pedestrian linkages, especially around Vauxhall Cross", and finally "All development should help improve the degraded environment of this area and strengthen perceptual and physical links with the rest of London"*
- **2B.24 (Elephant & Castle):** *"Environmental and traffic management improvements are crucial to the successful re-development of this Southern Gateway to Central London"*

Mayor's Transport Strategy

The Mayor's Transport Strategy (July 2001) contains a wide range of policies and proposals with relevance to this project. These include:

- **Policy 4G.3**, which states that: *"TfL and the boroughs will work together with the police to address personal security issues, reducing crime and the fear of crime on London's streets"*
- **Proposal 4G.10** states that *"The London boroughs will be encouraged to design and manage appropriate local streets as Streets-for-People areas emphasising their function as social spaces. Priority will initially be given to areas of high deprivation, regeneration areas and in particular areas of high density neighbourhood renewal."*
- **Policy 4I.1:** *"The Mayor.....will aim to create a connected, safe and attractive environment that encourages people to walk..."*
- **Proposal 4I.2:** *"Transport for London will work with the London boroughs and other relevant organisations to ensure the effective promotion and delivery of better conditions for pedestrians"*
- **Proposal 4I.8:** *"Programmes of improvements will be developed by TfL and the London Boroughs to make the street environment more accessible, removing barriers and obstructions that make it difficult or unsafe for pedestrians to use the street"*
- **Proposal 4I.9:** *"TfL....will establish streetscape guidelines to encourage consistent good practice and design. These will include minimum footway widths related to usage, and set minimum standards for the maintenance and management of London's streets, including repair of footways, signing, avoiding clutter, removing graffiti and rubbish, keeping streets adequately illuminated, and the provision of CCTV"*

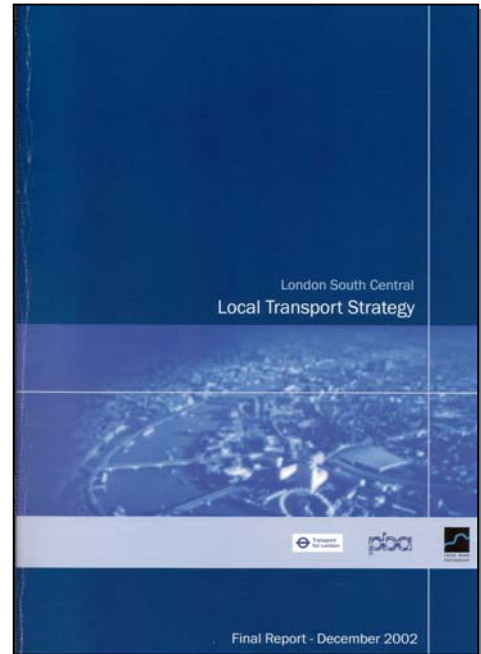


8.2.4 London South Central Transport Strategy

This report was issued in final form in December 2002, and is a comprehensive appraisal of the transport networks across the LSC area. Produced by Peter Brett Associates on behalf of Transport for London and Cross River Partnership, it highlights six major themes, and the relevant ones here are:

Public Realm

"Public realm improvements relate to the development of measures that provide enhance access to the major transport corridors, interchanges, and community facilities. These measures may include environmental and capacity improvements for pedestrians and cyclists. A key objective of this theme is to facilitate a significant enhancement of the urban environment, thereby encouraging movement on foot and cycle as part of improved integration between modes"



Movement and the River

"Theme four relates to the severence effects created by the river and the orientation of the urban fabric that directly surrounds the existing approaches to the river. Consideration will be given within the strategy to ways in which the barrier effect of the river can be reduced in Central London. In addition the orbital accessibility afforded by the southern bank in the vicinity of Royal Festival Hall etc should be examined and extended. This may have particular relevance again in the vicinity of Vauxhall where such a strategy would serve to improve its accessibility and interaction with the other parts of the study area"

Accessibility

"The fifth theme relates to deprivation/accessibility issues within the study area. Examination of socio-economic and accessibility indicators have highlighted a number of distinct 'pockets' where the combined effects of high congestion levels, low transport capacity, poor accessibility and social factors combine to reduce the opportunity available to those living within these areas. Eliminating such pockets is fundamental to any emerging strategy"

In annex A, the LSC Transport Strategy then provides details of New Scheme 7, referred to as "Minimising Viaduct Severence", which forms the basis for this project.

8.3 Previous Consultation

8.3.1 Pool of London Partnership Public Spaces Consultation (December 1999-March 2000)

The PoLP Public Spaces consultation highlighted the lack of safe pedestrian routes from the 'community hinterland' to Tooley Street, London Bridge Station and Guys Hospital/Kings College; and also between residential communities and employment locations and local outreach/training centres. It was argued that without encouraging new and safe pedestrian routes under the railway line, there would be a lack of integration between opportunities available to residents, and a danger of an even more stark contrast between each side of the viaduct. The study reported that local people said that the tunnels were dark, poorly lit, dirty, wet and smelly, making them fearful of crime and personal safety. It was reported that without exception, local people found them unacceptable.

8.3.2 Bermondsey Spa Regeneration Area Consultation (January 2000)

During the Bermondsey Spa Regeneration Area consultation process, a document was produced by the master-planners in January 2000. Quotes from the consultation exercise included the following:

- 1) *"The pedestrian tunnels passing under the railway arches are on the main routes linking the employment areas, schools, residential areas and key community facilities and are considered unsafe and poorly lit, and are therefore unpopular with residents. Any proposals to include 'safer routes to schools' must include these links."*
- 2) *"Pensioners are vulnerable to street attacks, particularly in: Abbey Street as they return from the Post Office; through the pedestrian tunnels; and within the housing areas – meaning they can become confined to their flats after dark."*
- 3) *"A number of streets listed below are known to be poorly lit and consequently are unpopular with residents of the area. These are the four main pedestrian links under the railway arches; Neckinger; the area around key sites E and H; the full length of Alscot Road; and Abbey/Druid Street."*

8.4 Albert Embankment Activity Studies

(Extracted from the Eric Parry Report, “*Albert Embankment Transforming Landscapes*”)

A number of major re-development opportunities along Albert Embankment are being pursued by developers which may have a significant effect on the character and land use of Albert Embankment and the surrounding area. Lambeth Council commissioned Eric Parry to develop a framework to achieve a unity of approach as redevelopment occurs and maximises the opportunity to improve the landscape and pedestrian environment within the area.

Activity Studies

Pedestrian activity could be broken down into the following four broad types:

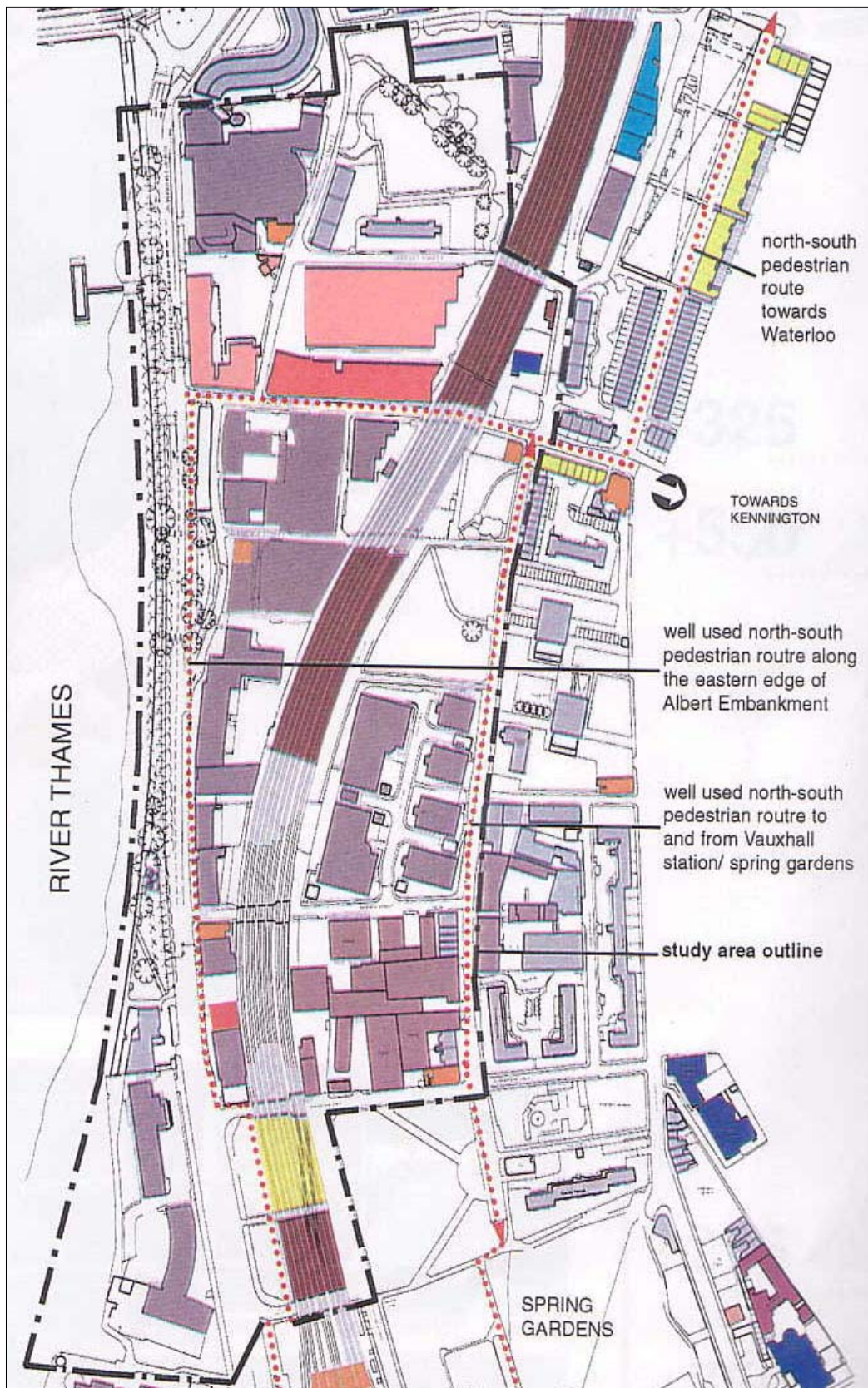
- Business Commuters and visitors in a north-south direction between Vauxhall Station and Waterloo, along the Albert Embankment (Busiest N-S route).
- Local residents in a north-south direction along Vauxhall Walk and Newport Walk.
- Local residents and workers in an east-west direction along Black Prince Road (Busiest E-W route).
- Local residents and workers in meandering east-west routes.

During peak hours the Albert embankment is well used by commuters to and from Vauxhall station. Commuters travelling north towards Waterloo use the riverwalk as a pedestrian and cycle route. From 10am until 4pm the west side of Albert Embankment is busy with tourists who arrive and depart by coach.

Throughout the day, local residents use a number of meandering ‘local’ pedestrian east-west routes. Black Prince Road is the main east-west route and the proposed new crossing where it meets Albert Embankment will improve this. The Black Prince Road shops seemed to be used much more than the Lambeth Walk ones.

Night-time: The Old Father Thames pub on the Albert Embankment seemed rather well used by local office workers during early evening. Residents drink in the four ‘local’ pubs to the east of the viaduct, and the bars and restaurants along Kennington Lane attracted people from further afield. The late night shops along Black Prince Road are important for serving the local requirements at night.

There are relatively few amenities and the existing ones offer a similar quality of goods and services. The shops and pubs only serve a local market and it seems that people do not travel into the area to use them. There are very few facilities for the visitors who arrive at Vauxhall Station or by coach along the Albert Embankment.



List of Delegates:

Mary	Akland-Hood	Resident
Melanie	Aust	South Bank Employers Group
Iain	Bailey	London Borough of Lambeth
David	Barrow	Atkins Faithful & Gould
Chris	Bateman	Better Bankside
Linda	Beard	Transport 2000
Celine	Blanc	DEGW
Geoff	Bray	The Project Centre Ltd
Sarah	Buckingham	English Heritage
Shamsha	Burns Heath	Artist
Nadine	Collins	Cross River Partnership
Jim	Cornell	Railway Heritage Trust
Adrian	Couch	South Bank Employers Group
Martha	Covell	Pool Of London Partnership
David	Dewar	Peter Brett Associates
John	Fosbarey	London Development Agency
Lorinda	Freint	London Borough of Wandsworth
Chris	Gaylord	Assael Architecture Ltd
Tim	Gough	Austin Winkley & Associates
Tony	Granycome	Woodhouse UK plc
Tim	Hall	Lewis & Hickey
Susan	Harrison	Resident
Richard	Horne	Railway Heritage Trust
Alistair	Huggett	London Borough of Southwark
Peter	Jones	London Borough of Southwark
Tim	Lalli	Part II Architect
Mary	MacGowan	London Arts Trust
Geoff	Mann	RHWL Architect
Stuart	Martin	WAM Architect
Cameron	Martyn	London Borough of Lambeth
Juliet	Middleton	CABE
Gordon	Mole	Cross River Partnership
Philip	Moore	Lambeth Riverside
David	Moore	The Project Centre Ltd
Andy	Newman	Free Form Arts
Julie	Norburn	Arts 4 Space
Clodagh	O'Reilly-Boyles	Cross River Partnership
Martin	O'Rourke	English Heritage
Russell	Pedley	Assael Architecture Ltd
Ben	Plowden	Transport for London
Paul	Rogers	Brixton Regeneration Manager
David	Rosenburg	Shunt
John	Roseveare	Roseveare Projects Ltd.
Alan	Rossiter	Free Form Arts
Andrew	Rutland	Shunt
Michael	Scanlon	Cross River Partnership
Alkesh	Shah	Atkins Faithful & Gould
Adrian	Stewart	Rockwell Solutions
Isobel	Stoddart	Sustrans
Marinda	Strauss	London Borough of Lambeth
Andrew	Stuck	Young Transnet
Seiji	Takamatsu	Space Syntax
Richard	Talbot	Network Rail
Sean	Tickle	Rolfe Judd Architect
Nicola	Tracey	London Borough of Wandsworth
David	Walker	Walker and Martin Architects
Sarah	Wang	Arts Project Management
Brian	Waters	Planning in London
Camilla	Ween	Transport for London
Anyia	Whitehead	London Borough of Southwark
Richard	Wignall	Woodhouse UK plc
Linda	Winstanley	Spacia
Michelle	Woo	Arts Project Management
Thomas	Young	Thomas Young Architects
Andrej	Znak	TfL Borough Manager for Lambeth

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Linda	Winstanley	Spacia
Michelle	Woo	Arts Project Management
Thomas	Young	Thomas Young Architects
Andrej	Znak	TfL Borough Manager for Lambeth

9. L.E.T. Conference Report

On 30th April 2003, Cross River Partnership hosted a best-practise seminar under the Light at the End of the Tunnel banner, at Southwark Cathedral. The day was attended by over 80 delegates. A list of attendees has been provided in the table opposite.

The event began with presentations from a number of speakers, followed by workshops. What follows is a summary of the main points made by the speakers, and the conclusions drawn from the day's proceedings by Savas Sivetidis, Director of Cross River Partnership



9.1 Michael Ball

Waterloo Community Development Group

'Wading Through Pigeon Shit - A Local View'

The Waterloo Community Development Group are a community group who have been active for over 30 years to ensure the local residential community are involved and represented. Their principle aim is to maintain and develop a sustainable residential community and to ensure land use is devoted to homes and essential local amenities like shops.



Key Points:

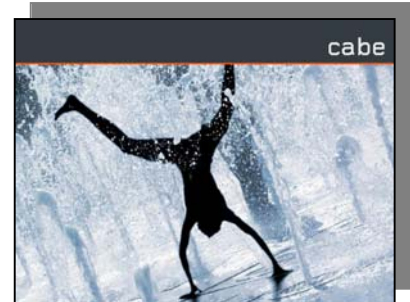
1. Waterloo district is initially defined by the railway station, which is one of the biggest in London.
2. The sustainable community has fallen from 100,000 people in 1900, to 50,000 in 1945, 4000 by 1970, to 8000 presently. This is a result of various factors including bombing during the second world war, and most importantly post-war planning which aimed to turn the area into offices devoid of local inhabitants.
3. The railways are the second biggest land use, and land owners, after the local authority, and these areas are highly significant including several kilometres of tunnels and arches which we hope will be developed to a much higher quality.
4. One of the most obvious problems is pigeons, due to the mess they leave behind. Their favourite nesting sites are the arches, where anti bird fencing doesn't deter them. Shrubbery growing in the arches provides further nesting sites.
5. The station itself sits next to St John's Church, a locally significant site, which is framed rather unattractively by one of the 200 arches and tunnels in the vicinity.
6. A potentially magnificent view of the IMAX cinema is now marred by a railway arch which replaced one of 82 shops which were lost during the construction of the Jubilee line extension in the 1990s.
7. Lower Marsh market provides one of the most vital resources for the area and should be a magnet for visitors and tourists, however it suffers enormously from poor connections from the South Bank, in the form of Leake Street, which is "100 yards of grime and filth". This thoroughfare also provides residents with access to their local amenities. The area has been promised £130,000 in improvements, but this is just a drop in the ocean.
8. Archbishops Park is one of the most beautiful parks in the area and access to it is unsatisfactory.
9. The railways don't always provide access routes, sometimes they deny them. The Jubilee line extension has created several dead-ends.
10. Examples of arches that have been well used include a gym, night-club, and the Archdukes restaurant.
11. Unfortunately though, many arches are empty, waiting to be let, or unused. These are ripe for redevelopment.
12. The real blight on the area are car parks which are some of the most extensive in London, being only a few minutes away from the City and central London. These car parks often are very run down and shabby in appearance. Even where new development is happening the car parks still provide an eyesore.
13. The river is London greatest amenity, yet many routes to it have been blocked or aren't used because they appear dangerous or uninviting. The cost to redevelop one arch is several hundred thousand pounds.

9.2 Juliet Middleton

Commission for Architecture and the Built Environment (CABE)

'The Value of Good Design'

CABE is a government-funded organisation whose main aim is to profile the importance of high quality design in the built environment, and to encourage projects which provides better living, working and recreational spaces in order to improve their quality of life. CABE itself is a relatively small organisation, but they work with a range of partners. Their recent publication of *'The Value of Good Design'* discusses many relevant topics.



Three main points have emerged from CABE's research:

- There is a strong link between urban design and civic pride.
- There are social benefits in investing in the design process.
- Design should concern all and needs to be championed by everyone.

CABE space is a strategy to help enable local authorities with areas including public infrastructure, green spaces and social structure.

Key points:

1. Design has had an impact in the arches and tunnels in the area.
2. These structures are unusual in that they are part engineering, part building, and despite the fact that they may be badly maintained they are essential to the character of London.
3. The structure of the railways is made up in incremental pieces, with each space beneath the line being a different shape and size. Most are about 9m wide and vary from about 20m to 150m deep which is when they become a barrier between communities.
4. The railways have an interesting construction and were practically built by hand, meaning they hold an important historical significance to the city.
5. Good design includes artists work in York Street, the lighting installation at tunnel 401 in Union Street, and the Archduke restaurant.
6. It is important to work with the qualities of the existing space, such as the light and shade.
7. Public spaces should be seen as part of a wider network which includes residential and retail areas.
8. There should be a coherent and shared urban design framework.
9. There needs to be a benchmark basic standard for every arch which can be referred to, and to which every site complies.
10. The variety of sites should be acknowledged and allowances should be made in planning to take into account the small as well as the large scale. The existing micro climate and current use of the site should also be borne in mind.
11. High intensity activities should be developed, e.g. Borough market.
12. Each development should be considered as a 24-hour space.
13. Momentum can be created by having a shared set of design standards. A coherent design approach can allow for diversity.

CABE advocates three strands of working practice:

Spacial:	from the scale of one arch to the whole city;
Organisational;	working with partners to create coherence and shared ideas, and
Material:	to ensure the high quality of materials, good use of light, and to promote sensitivity to the existing fabric of the site.

This then forms an intelligent strategy of management and design, which shouldn't be seen as a luxury, but as an acceptable standard of living.

9.3 Ben Plowden

Transport for London, Director of Borough Partnerships

'Walking in London - A Long Term View'

Ben was previously employed by Living Streets, formally the Pedestrian Association, so comes to this seminar from two relevant standpoints.



Key Points:

1. Brixton has examples of the extremes of arch use. Firstly, there is a fishmongers, which is thriving, busy and provides physical and social activity. Second, there is a tunnel through the railway which is the opposite; dirty, dimly lit and vandalised. These illustrate a number of relevant points.
2. For walkers arches provide destinations for local walking trips, and they provide routes between communities and amenities. When they are successful they are imperative to the local community, but when they are unsuccessful, they create barriers which can hold back local social and economic development
3. To change walking in London requires a long term commitment. Consider good walking cities such as Copenhagen and Portland where walking projects have been ongoing since the 1960s.
4. Walking is an integral part of transport in the city. The population of London has risen causing increased demand on the transport infrastructure. Walking accounts for more than 80% of trips under one mile, while cars make up the other 20%. Something needs to be done to ensure that more people don't migrate to taking short car trips when they would previously have walked.
5. For every trip that is taken by bus, tube or taxi, walking to that means of transport should be taken into account.
6. Walking has advantages including:
 - Environmentally*; we are 20 times as efficient in terms of space use than if we travel by car.
 - Personally*; it keeps us healthier, has mental health benefits including reducing stress and combating depression, and can make us more productive at virtually no cost.
 - Practically*; having people walking on the streets increases our sense of security and provides a form of natural surveillance leading to reductions in crime, and an increase in social and community benefits.
7. The Walking Plan for London - TFL walking strategy has a target which is to make London one of the most walking friendly cities in the world by 2015. This plan is currently in consultation and should be published by the end of July.
8. The barriers are from the physical to the psychological to the institutional, but the Walking Plan aims to overcome them all. They include:
 - The quality of the walking experience - e.g. traffic volume, poor air quality, traffic safety, personal security, lack of information in the forms of maps or signposts, and problems with access and mobility.
 - Institutional barriers include how we fund transport projects, how we train our transport professionals and how we prioritise large capital schemes and smaller scale schemes.
 - The cities that have promoted walking successfully have addressed all these priorities in parallel.
9. In order to improve the quality of information available TFL has been working with the London Walking Forum and the London boroughs developing sets of maps and the web site to make it easier for people to take walking trips.

10. Major schemes include the Millennium Bridge, Vauxhall Cross, Trafalgar Square, and the Hungerford Foot Bridges - these are all very successful, or on track to be.
11. Small scale schemes include pedestrian crossing facilities.
12. A chain, (or walking route) is only as good as its weakest link - pedestrian journeys are impeded, restricted or interrupted, either physically or psychologically, by one very short stretch of badly maintained, dangerous or badly designed space and they can sever communities.
13. In conclusion TFL must work together with their partners; Cross River Partnership, the London boroughs and the local communities to deliver the Walking Plan for London by 2015. We need to promote the walking agenda, which won't be easy considering the barriers as set out above, particularly the institutional barriers. However recent research has shown strong support for improving walking conditions across London - 61% want better pedestrian facilities in their local communities, and 73% believe reducing car traffic to improve streets and public spaces should be a medium or high priority.

9.4 Richard Talbot

Regional Public Affairs Manager, Network Rail

'Network Rail; Current Priorities'

Network Rail took over from Rail Track and remain a private sector company accountable to the regulating bodies of the rail industry. The company is a not for profit organisation that reinvests any profits into the sector.

Their remit is to operate, maintain and renew the rail network.

They will undertake enhancement projects, but their position is determined by the government who manage their budget. Network Rail are working closely with the Strategic Rail Authority to understand how to bring down the costs of running the railways while improving outputs. One way they are doing this is through revisiting their long-term contracts and in some cases not renewing them.



Key Points:

1. The structures of the railway are well built and robust and rarely fail. Maintenance checks ensure the structures remain safe.
2. Network Rail are not funded to take on cosmetic work. They are not happy with the way the railways are maintained aesthetically, but they often do not affect the structures stability, and are therefore not Network Rail's responsibility.
3. The railways have been under-maintained for the last 100 years, and especially post war. The railways reflect the amount of public money that has been available.
4. The neglect over this period cannot now be quickly addressed, it will take time to improve the railway arches.
5. The impact on communities include problems like vegetation, drainage, visual appearance, pigeons, and graffiti. It costs £1 million to clear vegetation from a 1 km stretch of the railway.
6. Legal liability is an issue with regard to pigeon proofing and graffiti. Where Network Rail is liable, they are still not funded for these areas, but are determined to be pro-active and to work with local government and the private land owners around the railway to reach solutions.
7. Funding and delivery resources are still issues and this is reflected in the progress they are making, but Network Rail are keen to align themselves with their partners to move forward on the issues outlined.

9.5 Linda Winstanley and Tim Hall Spacia and Lewis & Hickey respectively 'Old Place, New Space'

Spacia are part of Network Rail, and act as the landlords of the commercial spaces under the railway. Lewis and Hickey are a firm of architects who work with Spacia in redeveloping these sites



Key Points:

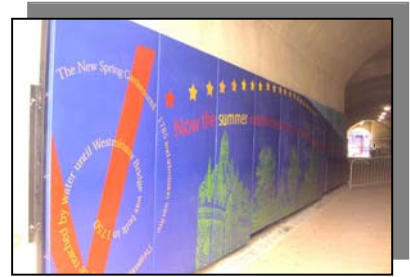
1. Several refurbishment projects are beginning this year, including several of the sites mentioned, many with local partners including the local government and private landlords.
2. Spacia is a commercial landlord who own about 4500 commercially let arches. This adds up to 2.5 million square metres of business space which is increasing constantly. There is a £25 million investment programme which is ongoing.
3. 96% of the arches are occupied, but many look like they are not, as they are used for storage. Spacia is looking at redeveloping some of these arches so they can be used more actively.
4. One development is at Joan Street/ Isabella Street. The aim was to open the area and bring in cafes and restaurants, using good lighting and CCTV. This project cost in excess of £1.5 million. The spaces are flexible to encourage different businesses.
5. Wootton Street / Brad Street is another development which had storage use and under-utilised premises and was quite forbidding. Planning permission was given to change the uses of the arches which are now a gym, offices and a restaurant. Dark areas will be opened up and developed. This project is due to finish in December 2003.
6. Each arch is opened up at the front and the back and glazed to create open, accessible and light spaces. Shades are put in place to avoid solar glare and to create working environments, and mezzanines are put in to make full use of all the available space. Up and down lighting is used and an inner layer creates waterproofing for the space.
7. Partners for this scheme included English Heritage and CABE. The only problem came from local residents who objected to having their gardens overlooked, but this was easily resolved. The surrounding areas are also improved through partnerships with CRP and others.
8. In conclusion input from the various groups and partners mean that despite these being commercial developments, much investment is also put into the local community.

9.6 Alan Rossiter and Andy Newman

Free Form Arts

'Transforming Tunnels'

Freeform Arts is a collective of artists and architects who, amongst other things, transform tunnels including a current project at Vauxhall Cross.



Key points:

1. Free Form Arts face the same problems that have been identified above, e.g. drainage, fly posting, pigeons etc.
2. Ideas for the pedestrian tunnel at Vauxhall Cross include using the tunnel as a gallery for local artists, using the walls for advertising space or installing lighting sculptures along the length of the tunnel. Local residents were consulted and feedback was used in the design approaches at the local library and in near by schools with the assistance of an artist and a writer who helped generate and record their ideas.
3. Concerns about graffiti and fly posting were targeted with ideas such as textured walls.
4. The focus of the design ideas was on making it an enjoyable experience to walk through this tunnel.
5. Up-lighting helps celebrate the structure of the arch and makes the tunnel feel safer.
6. Other projects they have worked on include the subway at Green Park. In the past projects have included tiling the walls, and creating carved stone panels.

9.7 Alistair Huggett and Peter Jones

Southwark Council

'Tunnel Visions - A Practical Perspective'

Southwark Council currently has five corporate objectives which include 'Cutting crime and the fear of crime'. It is this objective which is relevant to 'Light at the End of the Tunnel'.



Key Points:

1. Dark tunnels are one of the places where crime is feared most.
2. Recent studies show that pound for pound, money spent on lighting is more efficient than money spent on CCTV. In Stoke on Trent for every £1 spent on lighting, the cost of crime was reduced by £5 in one year, in Dudley the ratio was £1:£9. So there is a very clear financial reason for targeting lighting.
3. A Macro report suggests lighting is four times as effective in reducing crime and the fear of crime as CCTV.
4. Southwark Council is spending £1 million on lighting in the area this year. They are a relatively poor borough and are working with their partners to improve the tunnels in their area. Their partners include TFL, CRP, English Heritage and Pool of London Partnership
5. Schemes and projects are funded in various ways, usually the budget is made up by several parties.
6. These projects are being undertaken because it was discovered that there was an extremely strong correlation between where crimes took place and where lighting was inadequate. Where lighting was good for vehicles, it wasn't always suitable for pedestrians, and several areas had very low level lighting, including around the hospital which is an area where several sexual crimes had taken place.
7. There are 50 plus tunnels in the Southwark borough. There are many lighting solutions for these areas and developments include pigeon proofed lights which have two beams of light, up and down to light the whole of the arch.
8. Developments are also being made to improve efficiency, and to lower the running costs of lighting the borough.
9. Lighting doesn't just have to be functional. Arch 401 on Union Street is a good example of how light can be used to decorate the arch and provide a feature at a low running cost.

9.8 Savas Sivetidis

Director, Cross River Partnership

Conference Summary

In the context of the following four points, it is important to bear in mind that each site is different, they have different locations; there are different circumstances; that their costs will be different, and also, that the revenue which they may bring in is immensely variable.



One: A Basic Standard Checklist

A checklist of base-line standards needs to be produced. This should outline what is needed in each arch or tunnel, eg. sufficient lighting, adequate drainage, etc., to bring it to an acceptable standard. This standard should be agreed between all parties so that all arches and tunnels in the area are developed to this level of quality.

Secondly, what each of the basic design features contributes to the area should be outlined. Examples of tunnels redeveloped to very high standards could also be listed to show what is possible at the other extreme.

Two: Cost Estimates

A clear estimate of what each element will cost for each size tunnel is needed so that quick and efficient estimates can be made to bring each site up to the agreed basic standard. With this information the funders can be approached with a budgeted proposal. From there a time-frame can be put in place, and further funding avenues can be explored as and where needed.

A realistic funding strategy needs to be developed. Funding has come mainly from Section 106 through the local authorities, but this is unstable, and has to be bid-for in advance. These cost estimates would help each local authority with their bids by providing clear and realistic proposals.

Allocating responsibility for delivery is also an issue that will vary from site to site. This needs to be addressed.

Three: Maintenance

Maintenance is important because regardless of the standard to which you develop each site, if it is not properly maintained the project will fail. The funding that is required to maintain a site is separate from that which will redevelop it. Funding for maintenance is unstable and can vary a lot between local authorities, and over the years.

Estimates need to be made for the cost of maintaining each site to the basic agreed standard. From this an estimate of what income generated by the site will be needed to off-set the cost of the maintenance. Therefore the floorspace available at these sites will be directly transformed into the income needed to pay for the cost of maintaining them. i.e. They will become self-supporting. In this way profit from the site can be fed into financing further improvements to raise them above the basic standard.

Four: Commercial Potential

How can we use the viaduct as a *transformer*? It is important that the case is made for exploring the economic and social functions of the viaduct. There are 10 km of viaduct through the area. The viaduct can act as a transformer to make jobs more accessible to local people.

With reference to the earlier question, 'What time frame are we looking at?' - it is hard to know exactly how long it will take, but the way to get there is clear. It depends on the costs and the availability of funding.

Cross River Partnership (CRP) is a regeneration alliance of twelve partners, including Lambeth, Southwark, Westminster & Corporation of London local authorities, working to make the river less of a physical and social barrier. This is achieved by improving the physical, social and economic environment of the riverside area between Vauxhall, Elephant & Castle and Tower Bridge, which in turn links the less prosperous communities in the South with jobs and opportunities on the North. CRP was formed in 1994, and has delivered over £180m worth of projects to date, including Hungerford and Millennium Footbridges. The current £30m transport programme is funded by Single Regeneration Budget (SRB), Transport for London's Borough Spending Plan (BSP), European Union, and developers' Section 106 agreements.

CRP's Partners:

Business Link for London
City of Westminster
Corporation of London
Groundwork London
London Borough of Lambeth
London Borough of Southwark

Learning & Skills Council
London Tourist Board
Pool of London Authority
Network Rail
South Bank Employers Group
Transport for London

For the **Light at the End of the Tunnel** programme, the key partners are **Network Rail**, **Transport for London**, and the boroughs of **Southwark & Lambeth**. CRP will also be working on this project with:

Spacia: *Property agents for Network Rail and the UK's largest provider of small and medium-sized business accommodation. Has a long and successful record in managing and letting business with over 9,000 lettings nation-wide, around 50% of which are railway arches.*

English Heritage: *The government's statutory adviser on the historic environment. Officially known as the historic buildings and monuments commission for England, English Heritage is a non-executive non-department public body sponsored by the Department for Culture, Media and Sport.*

The London Development Agency (LDA): *Responsible for formulating and delivering the Mayor's economic development and regeneration strategy for London, promoting business efficiency, investment and employment in London as well as enhancing and developing the skills of local people.*

Better Bankside: *Based on the US-style BIDS model, led by the Circle Initiative and funded by the LDA. Aims to improve the quality of the Bankside environment, further develop the potential draw of the area, increase the sense of security and ensure that better and sustainable maintenance and management arrangements are put in place.*

Waterloo Project Board: *Responsible for the delivery of an SRB 6 programme, and aims "to achieve the comprehensive regeneration of the area between Blackfriars Road, Lambeth Road and St George's Circus; creating a safe & healthy world-class location at the heart of London; delivering benefits to those who live in, work in and visit the area.*

The Pool of London Partnership: *Operates in an area stretching East from London Bridge to the Butler's Wharf/St. Katherine's Dock area and includes the communities in North Southwark and the Wapping area of Tower Hamlets. Projects focus on promoting the Pool of London area as a tourist destination, improving the environment and infrastructure, supporting small businesses and enhancing the skills and employability of local residents.*

Comments and Requests for Additional Copies

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Overhead shot of viaduct taken from Guys Hospital (page 57) by Mickey Lee, www.mediamixer.co.uk

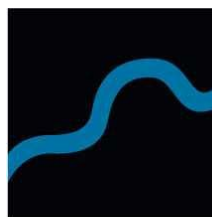
Arch cartoon (page 2) courtesy Frank Quigg (2003)

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