

Expert Report on the Heritage Significance of Berlin's Gas Lamps & Lanterns as and for World Heritage

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Summary of what this Report is about:

This Report:

1. Assesses and advocates recognition of the gas street lighting system of Berlin, not as some kind of historical relic, but as a living, breathing and above all *working system* which is intimately linked to the successive phases of the history of Berlin as a world-class city from the beginning of the 19th century to the present day.
2. Without attempting to be exhaustive, comparisons are made with other European cities where gas lighting has survived to one extent or another, or where it is being revived, just as trams are being revived or revitalized in many cities.
3. It is argued that advances in technology and good practice (as in Malvern, UK) enable gas street lighting to continue as a valid alternative or complement to electrical lighting. It is a remarkable fact that Berlin has had both gas and electric systems to light its streets, squares and bridges since 1882.
4. It is argued that there are many factors – the unique survival rate, the special history of Berlin, environmental responsibility, social responsibility, the expressed will of local communities, economic considerations, high quality of design, the aesthetically beautiful quality of light emitted by gas lighting, longevity leading to responsible stewardship of the earth's resources etc. – which invite comparison with other *working systems* which are already UNESCO World Heritage Sites, among them a canal and four railways, world-wide, and other working systems which are under consideration.
5. It is contended that the working system of *Berlin Gas Lamps & Lanterns* has a strong valid claim to being considered as a candidate for being inscribed on the World Heritage List, to which Germany as a whole and Berlin in particular have made notable contributions already. Criteria for selection for the World Heritage List are explained in the *Operational Guidelines for the Implementation of the World Heritage Convention*. There are ten of them. Sites must be of Outstanding Universal Value (OUV) and meet at least one out of the ten selection criteria. Appendix 1 to this Report shows how the Outstanding Universal Value may be defined: this definition is put forward for the purposes of consultation and debate. At least two of the selection criteria are clearly met by the working system of *Berlin Gas Lamps & Lanterns*. Moreover, 'The criteria are regularly revised by the World Heritage Committee to reflect the evolution of the World Heritage concept itself'¹. In other words the concepts of what constitutes 'world heritage' and what constitutes 'outstanding universal value' are dynamic, not static, and are constantly moving forwards as understanding deepens.
6. Moreover, it is argued that the working system of *Berlin Gas Lamps & Lanterns* has notable characteristics which make it also worthy of protection and cherishing under the *UNESCO Convention for the Safeguarding of Intangible Cultural Heritage* (2003). These characteristics include the special aesthetic appeal of the light emitted by gas lamps and lanterns (which not even LED can equal), the distinctive contribution which gas lamps and lanterns make to

¹ Reference: <http://whc.unesco.org/en/criteria>.

the urban character of countless streets and public places in Berlin, the attraction which gas lighting has to photographers, artists, musicians, poets and other writers, and above all the place it holds in the affections of local communities and moreover visitors to Berlin who place gas lighting alongside the working systems of trams, U-Bahn and S-Bahn and the ubiquity of the bicycle as being among those visual, design and social factors which define the 'Berlin-ness' of Berlin.

7. It is recommended that the draft Statement of Outstanding Universal Value, on the basis of which the Berlin Gas Lighting Working System could be put forward as a candidate for inscription on the World Heritage List, should form the central topic of a two-day seminar to be organised and held in Berlin as soon as feasible. One day would be devoted to a study of the system and the second day would be devoted to World Heritage criteria and come to some conclusions.
8. John Ruskin wrote 150 years ago that 'The greatest thing a human soul ever does in this world is to see something, and to tell what it saw in a plain way. Hundreds of people can talk for one who can think, but thousands can think for one who can see.' It is one of the challenges of gas lamps and lanterns that people take them for granted, as we go about our busy lives. But once the special beauty of gas lighting is pointed out to them, the response is immediate, warm, enthusiastic, committed. The challenge is to develop this awareness before it is too late.

1 Introduction

I first became interested in this important topic in November 2012 when Paul Harrison, a knowledgeable English friend in Berlin, guided me through numerous streets there where the predominant form of street lighting is by gas lamps or lanterns. Subsequently I met Bertold Kujath of Gaslicht-Kultur e. V. and Dr Agnete von Specht of Denk mal an Berlin e. V. We shared our interest in this unique Berlin survival of gas lighting and they invited me, first, to give a lecture on the subject – which I did in Berlin on 12 June 2013 – and to write this report, from the perspective of a recognized British heritage expert.

While I was Director of Conservation at the National Trust for Scotland I was ultimately responsible for all heritage management aspects of the St Kilda World Heritage Site and during that period we achieved recognition from UNESCO World Heritage Committee that St Kilda was a World Heritage Site for both natural (its original designation) and cultural significance. I live in the Edinburgh World Heritage Site and am a member of the UK ICOMOS World Heritage Committee. I am also a member of the ICOMOS International Committee on the Theory & Philosophy of Conservation. I sit, or have sat, on a good many other commissions or committees to do with the heritage at the national or international level. Further details of my career and background can be found in Appendix 2.

It will be obvious from this introduction and Appendix 2 that I am an expert on heritage and not an expert in street lighting as such, nor am I an economist or a social historian. My aim is to put as simply as possible – from a heritage point of view --the arguments for recognising the gas lighting system of Berlin to be uniquely special in its survival, its extent and in its ability to light the streets of Berlin where it is still operational in a way which honours the present and future as well as the past.

It is a mistake to consider the continuing use of gas lighting as some kind of exercise in nostalgia. Generally speaking all forms of lighting devised by mankind have a validity of their own, and they can often be complementary to one another. We can see the sense of this if we recall that in many countries, including Britain and Germany, it is the custom to light one or more candles for the evening meal. We do this not because we are nostalgic for the era of candlelight but because the 'living light' of a candle has a beauty and a character of its own which admirably complements all other forms of lighting. Similarly, in the many streets of Berlin where gas lighting continues to be predominant, gas lighting survives because in the late 1940s and again in the early 1990s the Senate of Berlin consciously decided to preserve and develop both gas and electrical lighting systems in parallel with one another, just as – unlike many other European cities including my own city of Edinburgh – the Senate of Berlin consciously decided to retain trams as well as buses as on-street forms of public transport. Both decisions were wise and far-seeing. It is almost *never* wise to depend solely on one system for public or private services, but to have alternatives which are more or less equally valid. A significant number of European cities, including Edinburgh, are expensively re-creating their tram systems to supplement existing transport systems, and this is far from being an exercise in nostalgia: both trams and buses have a part to play in an overall integrated system.

Similarly, some European cities are already recreating their historic systems of gas lighting, Prague being the most notable example; while other cities, for example Zagreb, are carefully preserving their working system of gas lighting. Gas lighting survives, albeit on a much smaller scale, in some other German cities and in some British cities, especially on key sites in London, and influentially in the spa town of Malvern where technically competent members of the local community have collaborated with the local government to put their system of gas lighting back in tip-top order. In all these cases careful consideration has been given to economic, social, environmental and cultural heritage factors. The fact is that, with the latest technology, gas production and gas lighting can be highly efficient and competitive as well as attractive.

A special interest of mine is the extent to which Berlin and London developed systems of public lighting (and transport) at much the same time, often with knowledge of and interest in what the other capital city was doing. There are still approaching 1,500 gas lamps or lanterns in the City of Westminster – hundreds of them can be seen in the streets in and around Covent Garden, that endlessly vital and attractive district to the north-east of Trafalgar Square, to the delight of residents and visitors alike. Many more can be seen in some of the royal parks, for example Green Park and St James's Park, and in the streets around and leading up to Buckingham Palace and the Palace of Westminster. The Mall, leading up to the front door of Buckingham Palace, is our exact equivalent of *Unter den Linden* and it is still lit by the 'living light' of gas lamps and lanterns. Even our National Gallery of Art, in Trafalgar Square, is still flanked by working gas lanterns of exceptional beauty of form and moreover valued for the beautiful quality of light which they emit.

2 Terminology – gas lamps and lanterns

I have adopted the use of the phrase 'gas lamp' to express that kind of street lighting, specifically powered by gas, in which the light source is on the top of a post or pillar. I have adopted the phrase 'gas lantern' to express that kind of fitting which is usually fixed to the wall of a building by a bracket of some kind. In London spectacular working examples of such 'lanterns' can be seen at the church of St Paul's Covent Garden, and on the north façade of the Theatre Royal, Drury Lane, and I have

seen many such examples in different suburbs of Berlin. The two forms are sometimes combined as candelabra, such as the candelabrum outside the entrance of Dahlem Dorf U-Bahn station, where five or more splendidly designed lanterns are combined on a single post.

3 Identifying the issues

- In Berlin some 42, 500 (2012) gas lamps, lanterns and candelabra are still in continuing use *lit by gas* – thus constituting a *working system* (analogous to trams) as well as heritage (from design and historical points of view) unique in the whole world.
- My central contentions are that this working system has total validity as a continuing complement to the electrical lighting system introduced in 1882; that it should continue to be honoured for the efficient service that it provides, now and in the future, and so should not be shy of contemporary design elements being added to what we have already; while in addition I will argue that the system as a whole, and the individual artefacts which make up the system, clearly constitute both tangible and intangible heritage with potential for recognition on both those counts by UNESCO, now or in the future.
- This report acknowledges that there is a current and lively debate about the relative merits of the gas and electrical lighting systems serving the streets and citizens of Berlin; accepts that both systems have their merits and their demerits; acknowledges that few forms of energy can be produced without producing some kinds of pollution or waste; urges that regular and well-informed maintenance and replacement elements are vital to the future of all such systems; and that Berlin has a record of preserving, maintaining and using both gas and electric working systems to an extent and degree unparalleled in the world.
- Whenever I think of Berlin I think of gas lamps, bicycles, trams, U-Bahn and S-Bahn, usually together, as expressing the ‘Berlin-ness of Berlin’. They are as much part of its signature tune as the confident new architecture which has sprung up in Berlin since *die Wende*. We no longer need to inhabit a design world which is so naïve as to demand ‘either/or’, generally in response to some passing economic or social fashion, but we have the choice and the ability to live in a design and functioning world of ‘both/and’.

4 Summary of tangible heritage values

- Tangible because the introduction of different modes of street lighting– tentatively from the late 17th century and wholeheartedly from the early 19th century, Berlin and London being two of the leading examples --contributed beyond anything that we can measure to towns and cities becoming safer places where pedestrians and successive modes of transport could move around freely, and where businesses and social activities of all kinds could be carried on, in the darker months of the year, and late into the evenings.
- Tangible because from c.1820 onwards leading architects, industrial designers and manufacturers sought to make gas lamps and lanterns as efficient and attractive as possible.
- Tangible because as Berlin grew during the 19th and early 20th centuries with successive waves of development the streets were paved and lit, the design of the lighting frequently complementing the design of the architecture and complementing it in scale.

- Berlin streets, residential streets in particular, have a distinctive character with very well designed and laid pavements of stone slabs flanked by mosaic pattern of smaller stones and by excellent planting of trees.
- The gas lamps and lanterns of Berlin, together with the pavements and planting, form a rich urban landscape which is loved by its residents and appreciated by its visitors.
- There are few other world-class cities where the design and character of the street lighting is such a memorable feature. There are few more pleasing urban sights, aesthetically speaking, than a broad Berlin street with a long row of 'in-line lamps' or quiet residential streets with the silver tops of the top-piece lanterns complementing the trees and the architecture.
- The history of gas street lighting in Berlin dates from the lighting of the world-famous street of *Unter den Linden* in 1826 with lamps on posts made by a London firm; equally important is the introduction of electrically-powered street lighting in 1882. It is unique in the world that in Berlin, because of the special circumstances of its 20th century history and also because of conscious technical and aesthetic preferences, both gas and electrical lighting systems have continued to serve the city and its suburbs for almost a century and a half.
- Reference will be made later to the UNESCO World Heritage Convention 1972 and to the way in which a case can be made for aspiring to World Heritage status and improved good management practice for the street lighting of Berlin.

5 Summary of intangible heritage values

- Intangible because, beginning with the design-work and example of Karl-Friedrich Schinkel, gas lamps and lanterns were considered to be as much an ornament to Berlin as well-designed pavements, water pumps, signs, seats, bridges, and other street furniture: all these elements constitute together a 'public realm', greater than the sum of its parts, in which citizens and visitors experience visual delight and also feel safe from harm.
- With gas lighting the 'visual delight' is expressed through the 'living light' of the gas mantles – this 'living light' is analogous to the 'living light' of candles which are still deployed in countless households (in Germany more than in any other country) to accompany a meal; this 'living light' has been imitated but cannot be equalled by any known form of electrical lighting – it is, quite simply, different and should be understood and allowed to be different.
- Intangible because gas lamps and lanterns, together with the associated technology of their functioning and their supply of gas, can be considered one of the great technical achievements of the early industrial age – but it is important here to note that the technology and design of gas lighting has continued to develop and should be allowed to go on developing.
- Intangible because they represent a remarkable model of international collaboration, for example, British companies being active in Germany from the very early 19th century until 1914; and know-how being exchanged in both directions.
- Intangible because gas lamps and lanterns were almost perfectly evolved for their function – e.g. they do not allow rain or snow to settle, and they are to a considerable degree self-cleaning. Moreover, light produced by gas does not attract moths or other insects because of the absence of ultraviolet and blue frequencies. By contrast electric lamps, or gas lamps which have been electrified, usually display a sad harvest of dead insects.

- Intangible because gas lighting provides a clear, steady light which is not harsh but provides perfect conditions for travellers on foot, bicycle, horse (where applicable) and motor transport.
- Intangible because the aesthetic quality of the gas lighting of streets has attracted the attention of innumerable artists, photographers and writers.
- Intangible because many writers including the Scottish writer, Robert Louis Stevenson, who wrote an essay *In Praise of Gas Lamps*, have commented upon and celebrated the character of gas lighting.
- Reference will later be made to the UNESCO Convention for Intangible Heritage which clearly has applicability to the strongly-felt desire expressed by many citizens to retain both gas and electrical lighting which could each continue, and continue to develop, in parallel in Berlin and nowhere else in the world to the same degree.

6 A short history of public street lighting in Berlin

- I have not sought to make an exhaustive study of street lighting in Berlin but I have looked at many examples, read and re-read with pleasure the celebratory book *300 Jahre Strassenbeleuchtung in Berlin* published by the Senate of Berlin in 1979 to accompany an exhibition of the same name, and visited the Open-Air Museum of Gas Lamps² in the *Tiergarten*. This collection was in particular the inspiration of Senator Harry Ristock who saw very clearly the advantages of retaining both the gas and the electrical working systems of street lighting in Berlin. I have also consulted the other sources given in my Bibliography at the end. Broadly speaking all the major cities of Europe followed the same pattern: (i) in the late 17th century attempts were made to light streets using oil-fired lamps or lanterns; (ii) in the 1820s, especially in Berlin and London, the recent availability of gas-production and distribution technology meant that gas lighting could be introduced, and other cities soon followed; (iii) then in 1882 Berlin introduced electrical street lighting schemes, some of which were very fine in terms of design. In most European cities electricity gradually superseded gas such that by 1939 (when there were still approximately 80,000 gas lamps and lanterns in Berlin) electrical systems were favoured almost everywhere else in city centres but not necessarily in suburbs. In the peculiar circumstances of West Berlin in the divided city following the Second World War there was good reason to continue using gas technology, as well as electrical, and it proved a sound choice. West Berlin was thereby able to achieve a marked degree of self-determination in lighting, and demonstrated in this way its independence of Communist-controlled East Berlin, so that gas street lighting is in many ways an important historic symbol of the independence of West Berlin during the Cold War period.
- Oil-fired lamps required a daily re-filling of their reservoirs, constant monitoring and maintenance; moreover their luminosity and range was fairly limited.

² The *Gaslaternen-Freilichtmuseum Berlin* lies between the Landwehrkanal-Schleuse and the Berlin-Pavilion and consists of 90 examples of 19th and 20th century historical lanterns from 25 German and 11 other European cities, including London. The handsome example from London dates from the reign of King George V, 1911-1936, and there are identical ones in Green Park, London, still in active use. Some of the exhibits in the Tiergarten collection look somewhat careworn and a programme of maintenance and repair and re-interpretation is badly needed.

- Gas-powered lamps, once issues of gas manufacture and supply had been overcome satisfactorily, provided a steady non-flickering but pleasant light. Gas lighting represented a major break-through in its suitability to light public spaces and leading architects, from Karl-Friedrich Schinkel and (in Scotland William Burn) onwards, were pleased to design exemplary elements.
- Oil and gas lamps began to figure in paintings and engravings of urban life and so we have plenty of illustrations of how they appeared even before photography became common in the mid-19th century.
- A British firm, the Imperial Continental Gas Association (ICGA), early took the lead and in 1825 began to provide gas lamps and lanterns and, perhaps even more important, established the first gas manufactory in Berlin. (Edinburgh's first gas manufactory was contemporary with it: designed by William Burn; it was visited by Schinkel in 1827.)
- Edward Gärtner's mid-19th century paintings of the *Unter den Linden* show in careful detail how the regular rhythm of the gas lamps, on tall posts with elegant lanterns, created an urban *cultural landscape*. The visual purity of the streets, with architecture and street lighting admirably complementing one another, is something to be envied when compared with the average street of our time with its superfluity of signs and street furniture.
- Throughout the 19th century improvements were constantly being made to the technology of gas production and to its use in lighting streets and interiors. The gas burners became more and more sophisticated; different cities and manufacturers favoured different types. When gas lamps are converted to electricity, the 'light bulb' is generally fixed to the underside of the tops of the lanterns so that the glass-enclosed space looks curiously empty and its condition almost always deteriorates and looks dirty and neglected. I have seen countless examples – one opposite the Houses of Parliament in Westminster – where the fitting seems completely abandoned: the bulb is replaced from time to time, but nothing or very little else is cared for. This is an issue of urban management which cries out to be addressed.
- Until the 1920s there was no technology for automatic lighting of the lamps, but several systems, from clockwork to electronics, have since then been invented and perfected. Technologically, it is not a problem today and much money has been expended on the latest electronic sensor system in Berlin. In this respect German technology seems to have been vastly in advance of British technology: older people who remember 1950s Britain have many times told me that they remember with pleasure the lamplighter who came round at dusk, propped his ladder against the projecting lugs of the lamppost provided for maintenance, and lit the lamp with a long pole. Gas street lights in Zagreb are still reportedly lit by hand, as also are those in the suburb called The Park in Nottingham. Of course the flame in its mantle had to be extinguished the following morning as well, so a veritable army of such lamplighters was required, able and willing to work in all weather conditions. Perhaps because of their sheer rugged reliability they were much admired as 'men for all seasons' and in Edinburgh, where I walk past the childhood home of Robert Louis Stevenson (1850-1894) almost every day, a verse from his poem *The Lamplighter* is fixed, on a sheet of polished brass, on the railings in front of his parents' house (it is necessary to know that the Scots word for lamplighter is 'Leerie'):

'For we are very lucky, with a lamp before the door,
And Leerie stops to light it as he lights so many more;

And oh! before you hurry by with ladder and with light:
O Leerie, see a little child and nod to him to-night!

Less well known is his essay of 1878 entitled *A Plea for Gas Lamps* written at the very point at which electricity was being innovatively introduced into street lighting and, speaking of two examples in Paris, describes it as 'horrible, unearthly, obnoxious to the human eye; a lamp for a nightmare! ... To look at it only once is to fall in love with gas, which gives a warm domestic radiance fit to eat by.'

This is a little bit unfair on electric light but I suspect we have all been in situations where over-lighting or ill-adjusted electrical lighting, or fittings too powerful for their context, have caused us to squirm in discomfort.

- On 25 May 1882 electrical street lighting was first introduced into Berlin in Kochstrasse, it seems, and roughly the same must be true of London, Paris and other major cities in the most prosperous European countries at that time. Just as with gas, these introductions were dependent on the rapid evolution and technology of manufacturing electricity and of distributing it by cable to all those places where it was to be used, a huge undertaking which we now take for granted.
- The era around 1900, from 1882 to 1914, was a time of great stylistic and technical creativity – *Art Nouveau* in France, *Jugendstil* in Austro-Hungary and Germany and the Arts & Crafts movement in Britain – when towns and cities reached a sort of perfection of materials and design. This attention to detail, and brilliance in both design and manufacture, can easily be seen in old postcards and other images taken during this period. Buildings of great importance, such as the *Kaiser-Wilhelm-Gedächtniskirche*, were adorned with gas light fittings by the same distinguished architect, Franz Schwechten, as the buildings they lit or protected. The iconic Brandenburg Gate was framed on the *Tiergarten* side with a forest of the five-branched gas candelabra we have earlier noticed at the entrance to the Dahlem Dorf U-Bahn station – the effect must have been magnificent – and on the *Pariser Platz* there were candelabra of 1905 designed by Ludwig Hoffmann and, even more splendidly elegant, others by Ludwig Schupmann. Other distinguished architects who designed light fittings, whether gas or electric, at this time included Emil Högg and Alfred Schneeganz. Högg's designs are represented in the Open-Air Museum and have an extraordinary vibrant elegance and energy about them.
- The lighting of bridges, embankments, squares and entrances to railway or metro stations generally called for specific treatment and in many, perhaps most, European cities magnificent examples survive but usually converted, rather too hastily perhaps, to electricity. In London there are two remarkable series which are seen every year by millions of people, those on Westminster Bridge, at the very heart of the nation, and those on the Embankment – a triumph of the foundry that produced them - opposite the Houses of Parliament.
- Between the two World Wars was also a very creative time for street lighting as it was for public housing, and for architecture and urban planning generally. Strangely, few examples seem to survive in Berlin or London though in some cases the street lighting which goes with the famous *Siedlungen* is original. In Berlin a remarkable survival of this time is the series of electrical candelabra down the 'East-West Axis' designed by Albert Speer, who had such a

great sense of theatre and of materials, as may be seen – many renewed, naturally – in the Charlottenburger Chausee.

- Following the end of the 2nd World War it is said that 80% of the street lighting of Berlin had been destroyed. But this also means that 20% of it had survived, and that was taken as the starting point. In the 1950s came the ‘mushroom lights’ or *Pilzleuchte*, of different sizes, from 16 metres high downwards; and the ‘in-line lights’, which I have seen in countless locations in Berlin, superbly well adapted for their respective street-scale or traffic densities as they can be varied in height and the number of gas mantles can vary between four, six or nine, giving an enormous range. In fact the majority of Berliners and visitors probably do not notice just what a superb solution this design provides for urban lighting of busy streets, visibly better than the recently introduced new electrical lamps cruelly nick-named *Jessica*: when something works really well, then on the whole we tend not to notice it, and these superb in-line lamps provide a really good light for driving, cycling or walking. Another all-pervading design is the top-lit lamp, the design dating from the 1930s though much reproduced later, which looks to the irreverent eye somewhat like a silvered jelly-mould, which is absolutely *perfect* in terms of providing agreeable and adequate and warm-toned lighting in relatively small-scale residential streets. Their removal, widely threatened, would be an appalling visual disaster.
- Therefore many of the designs currently in use date from the 1950s and 1960s, decades whose design-work is becoming more and more appreciated. It would be ironic if this appreciation were marked by a period of throwing much of it away. It could only be regretted later, as British cities have come to realise – belatedly – the mistake they made in throwing away their tram systems. In Milan it is delightful to see historic trams of the 1930s and modern stylishly elegant new trams working side by side. Why not?
- It is important to say here that, this being above all a *working system*, it would be good if creativity continued and if a further layer of history and good design – and of technical improvements – could continue to be made to the existing stock of gas lamps and lanterns.
- Cast-iron masts or posts of the 19th century can have an extraordinarily long life. Thousands of them survive, most with more recent lamps on top of them. This has not been the case with electrical light fittings – except for exceptional and very expensive kinds – which since the 1970s have had in-built obsolescence designed into their production.
- It need hardly be said that the best of electrical fittings are of course very good: but in my observation the best are quite rare. They tend to be provided for very special situations or contexts, relating to high-quality and exceptional developments. What is so good about the in-line gas lamps, whatever their scale in a particular street, and the top-lit lamps, is that their very ordinariness is so excellent, and so reliable. It would be a huge improvement in the present situation, however, if more of the ‘specials’, such as those by Franz Schwechten, for example, could continue to be lit by gas and to be better maintained. I have seen few urban sights more thrilling than the five-branched candelabrum on the island of grass in the middle of *Schloss Strasse* – lit up on a winter’s evening – and the double enfilade of suspended gallows-type lamps, still gas-lit, extending northwards all the way up to *Schloss Charlottenburg*. Berlin may not have its *Canale Grande* but it does have its *Schloss Strasse* which, perfectly complementing the architecture of the flanking buildings, deserves the highest level of protection.

- On the subject of preservation, and reviewing in my mind all the layers of history referred to above, I can only say that converting gas lamps to electricity is very much second-best. It is certainly better than destroying them – and I am thankful to see former gas lamps all over Britain, preserved (I suspect) because they were so good and that nothing better could be afforded to replace them. But in a way it contradicts the whole nature of the design of the lantern and has only been acceptable because the vast majority of citizens are, understandably enough, not aware of what has been happening in their name.
- Cities need both change and stability: the working system of gas lighting, as valid a choice now as in the 1820s or the 1950s, provides Berlin – magnificently – with that degree of stability.
- All systems, whatever their nature, require regular monitoring and maintenance. It is disappointing to see some elements of the gas-lit system being quite deliberately neglected.

7 Designation for protection

- Every civilised country has legislation and policies designed to protect its heritage, and both Germany and the United Kingdom have highly-developed systems that are widely admired by other countries. There seems no doubt that in Germany as in Britain any individual structure or ensemble of structures fixed into the ground (which distinguishes these structures from ‘moveable heritage’) can be designated as heritage on grounds of their architectural, archaeological, industrial archaeological, artistic, technical or historic significance. In Britain I am aware of the listing of individual gas lamps and lanterns in use in Green Park, St James’s Park and around Buckingham Palace and other royal residences; those gas lamps or lanterns which adorn the Palace of Westminster are listed as being in the ‘curtilage’ or immediate vicinity of the listed Houses of Parliament. The gas lamps and lanterns of Malvern are listed under Nr. 1389559 in the National Heritage List maintained for England by the statutory body, English Heritage.
- What is unique about Berlin’s much more numerous gas lamps and lanterns is that in many streets they collectively form an ensemble and should surely be designated as an ensemble: to take one pertinent example again, *Schloss Strasse* in Charlottenburg has a uniquely special ensemble of gallows-type hanging lamps extending the whole length of the street leading northwards to *Schloss Charlottenburg*; at one point there is an oval traffic island in the midst of which stands a five-branched candelabrum with lanterns based on drawings by Schinkel; an integrated approach to the heritage protection and management of this street will take into account the relationships between the architecture, trees, paths, roads, gas lighting and the whole resulting urban form and character. I understand that this present harmony, with the gas lighting playing its proper part, was the inspiration of Hans Heckmann, a senior employee of the Senate’s former Department for Building and Housing³, with experience of town planning, who documented the issues in his autobiography *Kandelaber-Heckmann*(2007). His opinion in the 1970s and 1980s was that in the special historical places of the city it

³ Today this is called the Department for Urban Development, a significant cultural change of emphasis.

was inappropriate to use (for example) *Peitschenmastleuchten*, but rather historical gas lamp forms. So it was due to him, working with the Eosander Society, that *Schloss Strasse* had its in-line lamps replaced with the present ones. It is an outstanding success and fully deserves to be protected, irrespective of the date at which the present lamps were erected.

- Indeed gas lamps and lanterns have, from a heritage point of view, something in common with trees (which need to be replanted from time to time), with railways, canals, and other parts of working systems such as telephone boxes. These systems are all in a sense 'large' and 'diverse' enough to accept change and renewal without affecting the value of the over-arching systems. I will develop this point later in connexion with the outstanding international significance of Berlin's gas lamps and lanterns.
- Another remarkable personality who deserves to be celebrated in this context is Senator Harry Ristock. He was Senator for Building & Housing and he understood very well the importance of Berlin having a continuing system of gas lighting complementing a continuing system of electric lighting.
- Before proceeding to international forms of designation I will first mention the strong and enduring influence of European Architectural Heritage Year 1975 which encouraged all national and local governments to take more seriously not just the individual building or structure but the significance of the whole historical urban form and character. This influence was taken very seriously in Berlin during the succeeding decades and no doubt goes some way towards explaining why on 29 November 1992 the Senate of Berlin specifically decided that gas lighting should be retained in schemes of new and renewed street lighting in the interests of *Stadtbildpflege*. *Stadtbildpflege* is not the same as *Denkmalpflege*— both are important, but *Stadtbildpflege* has a broader meaning and can be applied to any street ensemble, of whatever date, or assemblage of layers of different dates.
- It is noteworthy that gas lamps and lanterns are still in use for their original purpose in a number of cities in the USA (Latin America has not yet been investigated in this regard). A well-known example is the gas street lighting on Beacon Hill, Boston, USA, where the gas lamps and lanterns fulfil an important role in the historic 'street scene' of exceptional quality.
- This question of urban context deserves to be stressed, in any consideration of designation and protection, because it is clear in many streets of – say – the late 19th century, and for much of the 20th century, that the street lighting was introduced as the housing and other urban structures were developed, in other words they form a complete urban landscape.
- Gas lamps and lanterns can be singled out for their attractiveness for a whole variety of reasons but in street after street in many of the more attractive and interesting suburbs of Berlin – which are the homes of people who love their neighbourhoods and their individual streets – the visual impact of the rows of top-lit or in-line gas lamps form perfect examples, in their setting, of *cultural landscapes*, and this is another form of designation which should be considered.

8 The relevance of World Heritage designation and of defining Outstanding Universal Value to the gas lamps & lanterns of Berlin

- Berlin has already broken new ground in the achievement of World Heritage designation for six of the most important and complete early 20th century *Siedlungen*, together with their associated open spaces. With the unique survival of the working system of gas lamps and lanterns Berlin has the opportunity once more to offer to the world community something of unique value and interest.
- In order for a State Party, in this case the German Federal Government, to put forward a candidate for consideration by UNESCO's World Heritage Committee there has to be a recognition that the proposed site – which, as with the *Siedlungen*, do not have to be in the same place but can be in many places – has Outstanding Universal Value (OUV). Later, in Appendix I, I will provide a draft for a possible explanation of the OUV of Berlin's Gas Lamps and Lanterns. But it is worth pondering the significance of those three deceptively simple words: (i) 'Outstanding' means that something stands out from the normal run of things – every town and city in the world has electrical lighting systems, for example, and some cities (e.g. Westminster, Cambridge and Nottingham) have retained some streets or cultural landscapes (e.g. Green Park, St James's Park, Covent Garden) where gas lighting has continued to be preferred. But Berlin is *truly* outstanding or exceptional in that it has a substantial number of special places and whole urban quarters still lit by gas. So this question of 'Outstandingness' should not be difficult to prove. (ii) 'Universal' – in my opinion the significance of this word is often glossed over, and there has been much intellectual discussion about what precisely it should mean – but, to take the useful example of the Berlin *Siedlungen*, it was not that difficult to prove that the exemplar of providing well-designed long-lasting housing, set in delightful environments, for rent, in a great city such as Berlin just before and after the first World War was an action that had a *universal influence* - it gave other cities, and other countries, a standard to aspire towards, often successfully, and with confidence and comparable quality of design. (iii) Value – which, as German heritage legislation also provides for, includes the value put upon something by its local community – means being able to show that something has *worth*, or value, such that people whose lives are affected by it would feel that their lives would be impoverished if it were to be removed. Just thinking about some of the well-known World Heritage Sites in Britain or Germany in connexion with these three words will give us some idea of what *value* or *worth* means: Potsdam Palaces & Parks; Blenheim Palace & Park; Kölner Dom; Durham, Cathedral & Castle; Historic Centre of Lübeck; Stonehenge; the Roman *Limes*, which embrace both Britain and Germany, amongst others. If any of these were removed, in whole or in part, a substantial number of human beings would feel impoverished and distressed, or even anguished.
- The same is readily provable for the gas lamps and lanterns of Berlin, but with one qualifying factor. It is often held, with some justice, that in the street people do not look either up or down. If you draw someone's attention to a beautiful pavement or a remarkable façade, people are invariably grateful and appreciative. I have been showing many images recently of the still working gas lamps and lanterns of Green Park, St James's Park and Covent Garden

area in London, or of the three streets in Cambridge which still have them. And invariably the initial reaction is 'But surely they are not really still using gas?' and when I say 'Yes, look at the gas mantles!', they are absolutely amazed, delighted, their breath taken away. They simply did not realise that it was possible. On the other hand the reaction I have had from more knowledgeable colleagues in Britain when I have asked them if they have been in Berlin and that the gas lamps and lanterns may almost all – except for a Cambridge-sized token – be removed, they have tended to say: 'But the gas lighting is one of the very special aspects of Berlin that I remember with such pleasure – it surely can't be true!'

- In Berlin I am more and more convinced that many of the people who are so fortunate as to live in gas-lit streets are not always very aware of them – they take them, as we all take so many aspects of our lives, for granted. But when they take part in a walking or bus tour of streets lit by gas, and appreciate the magic of their 'living light', they can at once see how beautiful they are, and how great a loss it would be to the Outstanding Universal Value of Berlin, if they were removed.

9 Criteria for World Heritage designation and the practicalities of inscription

- I have already explained that, in my estimation, the gas lamps and lanterns of Berlin are worthy of preservation under such national designations as heritage listing on account of criteria such as outstanding qualities of design, industrial archaeological, technical, aesthetic, historical continuity, continuing contemporary validity and cultural landscape value when they occur in groups or in series complementary to architecture and overall urban character: but, in addition, it is really the whole technical working system which is of exceptional value, partly as heritage, indeed, but also on account of its usefulness in the service of mankind and in particular the citizens of Berlin.
- It is very difficult for us to grasp, even with the visual evidence we have in drawings and engravings of the late 17th century onwards, how impenetrably dark and dangerous cities must have been with their stuttering and difficult-to-maintain early attempts at street lighting using oil lamps.
- The availability of gas manufacture from c.1800 and the invention of means of distributing gas from a certain point to many or countless points must be accounted one of the greatest inventions of mankind, perhaps only paralleled by the harnessing of energy by the steam engine and later by the internal combustion engine.
- The distribution of gas from a certain point to many or countless points, affordably, was accompanied from 1826⁴ onwards by the design and installation of attractive and well-designed street lamps and lanterns which rapidly became a significant feature in the cherished urban landscape.
- In London, as I have shown, gas lighting has always been valued for its special qualities by those who observed and understood such matters and a significant quantity of gas lighting survives both in specially prestigious situations (e.g. around Buckingham Palace, Green Park, St James's Park and its surroundings) and in the delightful streets of the Covent Garden area

⁴ Berlin and London were closely watching one another in this field, as in others, which is a factor of some cultural-historical interest. The Mall in London was first lit by gas in 1807 and some lamps of the reign of King George IV (1820-1830) survive on the north side where the original route lay. Other lamps survive with the royal cypher of King William IV (1830-1837), 'WIV'. Gas lamps appeared on Westminster Bridge in 1813.

which are one of London's premier attractions for visitors as well as being the seat of countless small business and residences.

- However, Berlin now holds the palm internationally for the sheer continuity and extensive distribution of its gas lighting in fittings which tell a significant story about the evolution of Berlin as an architecturally and aesthetically outstanding city.
- As it happens there exists an internationally accepted framework for the recognition of such technical and aesthetic heritage on an exceptional scale and it the *Convention concerning the Protection of the World Cultural and Natural Heritage*, UNESCO, 1972, to which all civilised nations have signed up, with very few exceptions, and to which Germany as a nation has made an exceptional contribution through the sheer number and quality and inventiveness (as with the Berlin *Siedlungen*) of its World Heritage Sites.
- Article 1 of the *World Heritage Convention* states that the following should be considered as 'cultural heritage': (i) individual monuments which are works of architecture, works of monumental sculpture or painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and *combinations of features, which are of outstanding universal value from the point of view of history, art or science* (my italics); and (ii) groups of buildings - 'buildings' here is shorthand for what might better be better defined as 'structures'-- *separate or connected ... which, because of their architecture, their homogeneity or their place in the landscape, are of Outstanding Universal Value from the point of view of history, art or science* (my italics).
- Of equal importance to the developing and dynamic interpretation of the Convention have been the *Operational Guidelines for the Implementation of the World Heritage Convention* and I quote below from the most recent revision of 2011, which states that the UNESCO World Heritage Committee considers a property as having Outstanding Universal Value if the property meets one or more of the following criteria ... There are in fact not one but two criteria which seem to fit exactly the nature and historical development of the Berlin gas lighting system, and they are criteria (ii) and (iv).
- (ii) They 'exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design', and (iv) They are 'an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history'.
- My contention is that a very powerful argument could be made to the UNESCO World Heritage Committee for the Berlin gas lighting working system to be considered as having Outstanding Universal Value.
- In Appendix I, following a study of similar statements for the Rideau Canal, Ottawa, Canada, the three Mountain Railways of India, and the Rhaetian Railway of Switzerland (all of which are demonstrated and accepted to be World Heritage using these two criteria), I have put forward for discussion a draft Statement of Outstanding Universal Value for the Berlin Gas Lighting System, which I suggest should now be the focus for debate, and that this debate should engage both all relevant national and international organisations, pre-eminently ICOMOS Germany and the International Committee for the Conservation of the Industrial Heritage (TICCIH), and with all fair-minded political, policy and heritage organisms or individuals who may be prepared to give this contention their interest and support.

- In the end, the decision whether to put forward a candidate for inscription on the World Heritage List has to be a political one, with the support of both local and national politicians at every level of Government. Among the considerations which should be borne in mind are: (i) the sheer waste and poor stewardship of not continuing in use a system which has behind it decades – even centuries – of usefulness; (ii) the gas lamps and lanterns and the peculiarly beautiful ‘living light’ which is emitted by gas lighting constitute an attractive, well-loved and widely appreciated aspect of *contemporary Berlin* (just like the Rideau Canal and the railways in their contexts mentioned above), and are not simply heritage elements relating to the past history of Berlin – they are both historical and contemporary; (iii) many of the counter-arguments, e.g. on grounds of health and safety, environmental responsibility, the economics of ensuring an adequate supply of natural gas or *Erdgas*, and so on, seem to me often to start from a point of view which is already prejudiced, and to be based on research or intellectual arguments which are under-researched and difficult to understand, and so I here make an impassioned plea that all prejudices should be cast aside – including heritage prejudices – and a moratorium to be declared, to give space and time for research, reflection and articulation of the arguments using international criteria and expertise.
- Germany has already shown exceptional foresight in the innovative nature of its complement of World Heritage Sites – ranging from historic town centres and exceptional monuments of past ages to the recognition of former industrial sites and public housing – and here is an opportunity which no other country can equal because no other country or city has this survival of a substantial system. I am not forgetting that there are other cities in Germany where gas lighting survives (and they are important in the total picture) but, just as with London and the other British cities I have cited, the survival rate pales into insignificance when compared with Berlin. Above all we must recognise that we are not simply dealing with the aesthetics of design and craftsmanship – though many of the ‘special’ lanterns are of exceptional beauty and the whole system is well-made and therefore ‘sustainable’ – but with a living, working system.

10 Criteria for Intangible Heritage designation

- The English word ‘intangible’ has the meaning of ‘not able to be apprehended by touching’, deriving from the Latin noun *intangibilis* and related to the Latin verb *tangere* – to touch. The nearest German equivalent is *nicht greifbar*.
- Here we are on exciting new ground because to consider the Berlin working system of gas lighting as ‘intangible heritage’ we have to argue that the following are significant: (i) the special character of the light produced by gas mantles, various characterised as ‘living’, ‘soft’, ‘warm’ or ‘atmospheric’.
- The *Convention for the Safeguarding of Intangible Cultural Heritage* was adopted by UNESCO in October 2003. Its significance is still in the process of being absorbed, by those numerous countries which have already signed up to the *World Heritage Convention* (1972), but increasingly it is being recognised as embodying profound insights into aspects of heritage which are clearly present but cannot be physically ‘touched’. Aesthetic, technical and spiritual qualities are among those aspects: and these are qualities which relate to some of the highest achievements of humanity over the centuries, which have made the greatest impact on the lives and well-being of humanity.

- The preamble to the Convention acknowledges ‘the importance of the intangible cultural heritage as a mainspring of cultural diversity and a guarantee of sustainable development’: this is directly relevant to the Berlin working system of gas lighting as this promotes diversity and also (when we contemplate the wastefulness of possibly throwing away a system which still had some 42,500 working elements in 2012) and represents good stewardship of the earth’s resources, having an exceptionally long life (if regular maintenance is not discontinued) and not needing to be replaced.
- The preamble also recognises ‘the deep-seated interdependence between the intangible cultural heritage and the tangible cultural and natural heritage’; and equally relevant to our case is the recognition that ‘existing international agreements ... need to be effectively enriched and supplemented by means of new provisions relating to the intangible cultural heritage’.
- Moreover UNESCO has a programme entitled *Proclamation of Masterpieces of the Oral and Intangible Heritage of Humanity*, which may also have relevance.
- The purposes of the *Convention* are: (a) to safeguard the intangible cultural heritage; (b) to ensure respect for the intangible heritage of the communities, groups and individuals concerned; (c) to raise awareness at the local, national and international levels of the importance of the intangible cultural heritage, and of ensuring mutual appreciation thereof and (d) to provide for international cooperation and assistance.
- It is argued here that the unique survival of many streets, suburbs and special places lit by gas in Berlin is an example of both cultural heritage and intangible heritage – intangible because the special qualities of the light emitted can only be apprehended by the sensitive eye; that the successive waves of technical innovations from 1826 until the present day represent technical intangible heritage; and that the ‘living light’ of the gas lamps and lanterns evokes in citizens, including artists, photographers and writers, special feelings of place and of attachment to the essential spirit of Berlin, ancient and modern; and evokes also feelings of ‘delight’ comparable to what we feel when we encounter other examples of aesthetic, technical or spiritual creativity.
- The programmes of *Gaslicht-Kultur e. V* and *Denk mal an Berlin* have gone a long way to promote respect for these intangible qualities and to raise awareness at local, national and international levels.
- It is argued here that in a modern democracy such as Germany the Senate of Berlin has a moral and ethical duty to respect the implications of the *Convention for the Safeguarding of Intangible Cultural Heritage* and to support the efforts which are being made to protect, preserve and enhance the living and still working system of gas lighting.
- As to ‘international cooperation and assistance’ I have already reported the special appreciation and delight evoked in thoughtful visitors from other countries, including Britain, who have concluded that the widespread survival of gas lighting is an example of Berlin prudence and good stewardship, up until now, and that it contributes something both intangible and powerful to the special ‘Berlin-ness’ of those suburbs and streets where it is still prevalent.
- Article 2 of the *Convention* is again eloquently relevant because it speaks of ‘practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some

cases, individuals recognize as part of their cultural heritage', almost every word of which can be held to refer to the working system of gas lighting in Berlin.

- A particular strength and wisdom of the *Convention* is its recognition that intangible cultural heritage has a *dynamic* quality which is difficult to pin down in legislation – even though we can understand very well what it means –as it is ‘constantly recreated by communities and groups in response to their environment ... and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity’ (Article 2).
- Prudently, and for the same reason, the *Convention* does not seek to suggest artificial limits or boundaries but states that intangible cultural heritage is manifested *inter alia* in a number of domains, and then it simply gives some broad examples.
- Article 3 provides us with what is virtually an Action Plan for ensuring that the working system of gas lighting in Berlin is better understood for the unique extent of its survival and its special intangible qualities: ‘*Safeguarding*’ means *measures aimed at ensuring the viability of the intangible cultural heritage, including the identification, documentation, research, preservation, protection, promotion, enhancement, transmission, particularly through formal and non-formal education, as well as the revitalization of the various aspects of such heritage.*
- Many of these aspects are under way, but some are not, or they need further research or clarification. It is admirable that, in addition to stressing the ‘dynamic’ character of intangible heritage in Article 2, the *Convention* stresses in Article 3 the need to ensure *viability and revitalization.*
- It is respectfully argued here that the analysis given above shows that the working system of gas lighting in Berlin projects a powerful case for being considered as intangible heritage, dynamic, viable and revitalized.

11 Bibliography of select works consulted

Burman, P. (2003): *Cathedral & Abbey Church of St Alban. Conservation Management Plan.* St Albans.

Bernau, N. (2012): ‘Das Leuchtenmassaker’, in *Berliner Zeitung*, Nr. 78, 31 March 2012.

Bowers, B. (1998): *Lengthening the Day, A History of Lighting Technology.* Oxford University Press, Oxford.

Feilden, B. M. and Jokilehto, J. (1998): *Management Guidelines for World Cultural Heritage Sites.* 2nd edition, Rome.

Heckmann, H., Liman, H., Röck, S. (2007): *Gaslaternen-Freilichtmuseum Berlin.* Deutsches Technikmuseum Berlin. Berlin.

Heckmann, H., Wahle, I. (2007): *“Kandelaber-Heckmann”. Eine Berliner Lebens-, Licht- und Liebesgeschichte.* Rostock.

Institution of Mechanical Engineers (1895): *Proceedings.*

Jokilehto, J. (2008): *The World Heritage List. What is OUV? Defining the Outstanding Universal Value of Cultural World Heritage Properties.* ICOMOS. Paris, Berlin: Hendrik Bässler Verlag.

Kerr, J. S. (2000): *Conservation Plan. A guide to the preparation of conservation plans for places of European cultural significance*. 5th edition. Sydney: The National Trust of Australia.

Liman, H. (2000): *Mehr Licht. Geschichte der Berliner Strassenbeleuchtung*. Haude & Spener, Berlin.

Röck, S. (2001): *Berliner Aussenraumleuchten. Eine Geschichte der öffentlichen Beleuchtung Berlin von 1826 bis 1989 mit historischem, stadtgestalterischem und sozialem Schwerpunkt*. Doctoral thesis. HdK Berlin. Berlin.

Senator für Bau- und Wohnungswesen, publisher (1979): *300 Jahre Strassenbeleuchtung in Berlin*.

Shakhmatova, K., in collaboration with Krzysztof Jan Chuchra and Steve Francey, based on original research by Andrew Kerr, *A History of Street Lighting in the Old & New Towns of Edinburgh World Heritage Site*, Edinburgh World Heritage, 2012.

UNESCO (1972): *Convention concerning the Protection of the World Cultural Heritage*. Paris.

UNESCO (2010a): *Intangible Heritage*.

UNESCO (2011): *Operational Guidelines for the Implementation of the World Heritage Convention*. Paris: World Heritage Centre.

UNESCO (2013): *The World Heritage Convention*. Paris: World Heritage Centre.

UNESCO (2013a): *World Heritage List*. Paris: World Heritage Centre.

Worbs, D. (2013): *Berliner Gasleuchten. Gutachten zur Frage des Denkmalwertes*. Im Auftrage von Denk mal an Berlin e. V.-Gaslicht-Kultur e. V. Berlin.

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APPENDIX 1 – draft Statement of Outstanding Universal Value (OUV) for the Berlin Gas Lighting Working System, as potential World Heritage

Notes:

1. This draft Statement has been prepared following a close study of the Statements prepared for the following examples of World Heritage Sites which are working systems: Rideau Canal, Canada, inscribed 2007, under criteria (i) and (iv); Mountain Railways of India (Darjeeling Himalayan Railway, Nilgiri Mountain Railway and Kalka Shimla Railway), India, inscribed 1999, under criteria (ii) and (iv); and Rhaetian Railway in the Albula/Bernina Landscapes, Switzerland, inscribed 2008, under criteria (ii) and (iv).
2. It is emphatically a first draft and will benefit from further discussions with specialists in different aspects of industrial heritage and with the expertise and experience which is represented by ICOMOS Germany, the German World Heritage Office and of heritage professionals in Germany and other countries.
3. It could form a key focus for a possible two-day conference which would cover: (i) on the first day a study of all relevant technical and historical aspects of the system with comparitors such as the protection and management of gas lighting systems in other countries (e.g. City of Westminster and the spa town of Malvern in the UK; Prague; Zagreb; Boston, USA), along with economic, social and environmental aspects where the best international opinion and experience would be garnered; (ii) on the second day a study of all relevant heritage aspects including the innovative concept of putting forward the Berlin Gas Lighting Working System as a further evolution of what constitutes World Heritage, with comparitors in Germany and other countries; how, building on the long experience of the City of Berlin, the system might be maintained and managed into the future with respect for its integrity; how the concepts of the required Management Plan and Buffer Zone could be applied to the Berlin Gas Lighting Working System; and a final session in which all ideas and knowledge shared could be forged into a step-by-step approach to recognition of the system as World Heritage and as Intangible Cultural Heritage.

Criteria for Selection as World Heritage:

It is contended that the Berlin Gas Lighting Working System clearly meets the following two criteria:

Criterion (ii): ‘to exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design’.

Criterion (iv): ‘to be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history’.

Discussion: these criteria exemplify the wisdom and experience of the World Heritage Committee in allowing different concepts of heritage to come forward for consideration. On Criterion (ii) it is clear that the Berlin Gas Lighting Working System represents a signal development in ‘technology’ which, through enabling our cities to be lit in the evenings and darker months, totally changed the experience of living in cities and towns for their communities (‘human values’), and moreover through skilful design and the aesthetic quality of the lamps and lanterns, often designed by famous

architects, contributed to 'town-planning' and to the understanding of what is meant by 'urban cultural landscapes'. On Criterion (iv), as with the canal and railway systems referred to, it is clear that no other city in the world has preserved in use – which is nearly always the best mode of preservation – a gas lighting system of such extent and of such high technical and design quality that, with regular maintenance, the core system has survived for almost two centuries with constant additions and modifications such as any working system must necessarily undergo. It is without question an 'outstanding example' of a 'technological ensemble'. The 'significant stage in human history', in which it led the world, while closely paralleled by London, was the transformation of cities and towns from being dark and dangerous places to being places of light and comparative safety, where people and transport systems could operate at all times and seasons. Unlike London where only pockets survive, though they are outstanding too in their way and their design, the Berlin system uniquely has quantitative survival as well as qualitative survival.

Brief Description:

It seems that Berlin and London were closely paralleling one another in endeavours to light their streets with a safe system of lighting which could be aesthetically attractive, functional in providing sufficient light for traffic and people, and affordable to maintain and operate. From c.1800 technical advances in the manufacture of gas and evolution of ways of distributing it made gas lighting appear to be the most promising possibility. But it was in 1826 with the gas lighting of the *Unter den Linden*, the iconic street leading from the Brandenburg Gate to the Royal *Berliner Schloss*, that the first reliable gas street lighting was initiated in Berlin. The lamps were designed and made in London, and a London company had in 1825 designed and built the first gas manufactory in Berlin. From the beginning the two cities collaborated, up to 1914. By a strange twist of history, the equally iconic street in London called *The Mall*, which leads up to Buckingham Palace, is still lit by gas lamps; around the Palace and in the nearby Royal Parks are many other examples of working gas lamps and some superb lanterns of great aesthetic merit. However, there were many phases of development of the Berlin Gas Lighting System, for example in the 1840s, 1860s, 1890s up to 1914, 1920s and 1930s, 1950s and 1960s, and even in the past decade when a more sophisticated system for automatic ignition has been fitted.

No other country or city in the world has anything approaching the c.42,500 (2012) gas lamps that survive in use in Berlin. Some suburbs or districts have complete and exceptionally harmonious ensembles of gas lighting. The first distinguished architect to design special lamps for the system was Karl-Friedrich Schinkel, one of the world's truly great architects and town-planners; but there have been many since. The post-Second World War history of the system is of immense and international interest in its own right as it showed that good design and flexibility could provide gas lighting for any imaginable urban context in cities that had changed greatly over the previous one hundred years. However, the classic ensemble is that which follows the housing developments of the 19th and 20th centuries and exactly complements the architecture. An additional aspect of gas lighting is that it is perceived to have a 'warmth' that no electrical source has yet been able to equal, and it is a warmth that has been celebrated by artists and photographers, poets and other writers. It is one of the factors that makes Berlin unique in the eyes of its communities and visitors: it helps to express the 'Berlin-ness' of Berlin.

Outstanding Universal Value:

The Berlin Gas Lighting Working System was from 1826 one of the two earliest initiated schemes of public street lighting in major world capitals, paralleled only by London where the survival rate has been by comparison minute. It played a crucial role in introducing into cities and towns world-wide the concept of a safe, reliable and effective system of public street lighting. Previous systems dating from the late 17th century were oil-powered, unreliable and under-powered.

Criterion (ii) speaks of 'interchange of human values', 'within a cultural area of the world' 'developments in ... technology' and 'town-planning or landscape design'.

It was the development of gas manufacture and distribution, in Britain and Germany in particular, which made it possible for cities such as Berlin and London to become as vibrant during the evenings and darker months of the year as during the day-time or lighter months, with an incalculable impact on trade and industry and on social and cultural lives. The public street lighting was complemented by the use of gas lighting for interiors, whether on a domestic or a monumental scale, but effective street lighting made it possible for people and transport systems to move around safely. It is hardly an exaggeration to say that, beginning with Berlin, the introduction of effective gas street lighting introduced the key concepts of the modern city.

In addition to this 'interchange of human values' the gas street lighting system (from the manufacture of the gas to the quality of light emitted from the lamps) represented a huge advance in technology, perhaps only equalled in its impact on the human race by the invention of steam power and the internal combustion engine.

There is also a profound aesthetic element to the survival of gas lighting in Berlin in that it is perceived – and celebrated by artists and writers over the past two centuries – that the 'kindly light' of the gas mantles has a warmth which other techniques of lighting have never been able to equal. The streets of gas lamps in those parts of Berlin where the c.42,500 (2012) gas lamps survive constitute an unparalleled urban landscape of beauty and harmony which is widely appreciated by local communities and by visitors alike.

What is also unique in Berlin is that since 1882 there have been parallel systems of gas and electric lighting, consciously retained, improved and celebrated. This forms a parallel with public transport systems since Berlin was one of the cities which had the foresight to retain its trams as well as buses, at times when other European cities were putting all their faith in the internal combustion engine and retaining only buses. In recent years this has been more and more regretted, and a good number of cities are reintroducing trams. In an interesting parallel, Prague is returning to the use of gas lamps and lanterns as its public lighting system of choice, especially in areas of high heritage value; while, in Zagreb, the urban gas lighting is zealously cherished. In Malvern, England, the local community has demonstrated that gas lighting systems can have a hugely enhanced level of efficiency, thereby achieving good stewardship of energy resources, while retaining aesthetic and historic design characteristics.

Criterion (iv) speaks of being an 'outstanding example of a type of ... technological ensemble', or 'landscape', which 'illustrates a significant stage in human history'.

The Berlin Gas Lighting System is demonstrably an outstanding example of a technological ensemble of a particular type and, just like the Rideau Canal in Canada or the four railways which are World Heritage Sites, it has been necessary for it to evolve, to introduce improvements, and to have regimes of inspection and maintenance.

One of the great benefits of the work of the UNESCO World Heritage Committee, supported by ICOMOS and other agencies world-wide, is that it has brought to the fore the concept of 'cultural landscapes' and recognises that 'urban landscape' has an equal validity with 'rural landscape'. A steady contemplation of those numerous streets in Berlin where gas lighting has survived demonstrates that architecture, street lighting, pavements (which in Berlin have a distinctive character which is generally well maintained) and the sympathetic planting of trees, form harmonious urban or cultural landscapes of great aesthetic beauty which are valued and cherished by their local communities.

It is striking how both Criteria (ii) and (iv) place emphasis on people and communities through expressions such as 'interchange of human values' and 'significant stage(s) in human history'. This is really the key to understanding the special character and importance of the Berlin Gas Lighting System. It has indeed elements of great heritage significance, and the active involvement of a world-class architect such as Karl-Friedrich Schinkel in the early stages speaks for itself. But it is not something which is backward-looking or nostalgic. Just like the Rideau Canal and the World Heritage railways it has gone on, decade after decade, fulfilling its allotted task and responding to human needs and human insights in terms of design and technical improvements. Within the dynamic concepts of 'World Heritage' and 'Cultural Intangible Heritage' it can, and should, go on responding to such changes and the system can be both cherished and added to over time. Moreover it is because of 'human values' that the Berlin Gas Lighting System is cherished for its aesthetically pleasing qualities of light – notoriously difficult to describe in writing, but instantly perceived by the human eye – and it is surely the case that our cities need more warmth rather than less, aesthetically and in other ways.

Historical Description:

On 21 April 1825 the Imperial Continental Gas Association (ICGA), a British company, signed a contract with the Prussian Ministry of the Interior and the City of Berlin to provide a gas-powered lighting system for the streets of Berlin and during 1825-6 erected the first gas manufactory in Berlin to supply the necessary gas. On 19 September 1826 the first 26 gas lamps were installed and working in the street, *Unter den Linden*, leading from the Brandenburg Gate to the royal Berlin Palace, clearly chosen for its iconic significance. Gas lighting was soon afterwards installed in other principal streets. On 10 September 1830 a nine-branched candelabrum of great magnificence, designed by Karl-Friedrich Schinkel (1781-1841), was installed in *Schlossplatz*, a square close to the Berlin Palace. Schinkel, official architect to the Royal Court and the State of Prussia, was fascinated by technical innovation and had studied gas manufactories and street lighting, in Edinburgh as well as London, on his study visit to Britain in 1826.

By 1846, some 2019 gas lamps had been installed in Berlin by the Imperial Continental Gas Association. By 1860 the number had risen to 4,227. It is virtually impossible to recapture today what a revolution this must have seemed. Parallel developments were taking place in London. Other major European cities quickly followed their examples, and the technology was also studied and

adopted in other major cities across the world. Major additions to the system were made during the decades of the late 19th and early 20th centuries, when Berlin was expanding rapidly, and it can be seen even today how the design and installation of gas street lighting paralleled and complemented the architecture, thereby creating harmonious ensembles of housing, pavements and streets which are among the most beautiful in the world. Moreover, as in other great world cities, the decades immediately before and after 1900 were years of great technical advances and at the same time of great perfection in design, craftsmanship and manufacture. Other famous architects designed lamps and lanterns for the gas lighting system including a great variety of 'hanging lamps' in which the lamps are suspended from a various types of elegantly shaped brackets. Moreover in the 1890s the classic 'Berlin lanterns' evolved from a combination of Schinkel's *Schlossplatz* candelabrum and *Jugendstil* elements. These can still be seen in some quarters, for example in Spandau, which is memorable for its gas lighting which embraces both gas lamps and an unusual number of lanterns.

As a consequence of the First World War, the involvement of the Imperial Continental Gas Association came to an end in 1916, and in 1923 the firm known as 'GASAG' (*Städtische Gaswerke AG*) came into existence. In the post-War period the design of gas lamps naturally followed the prevailing aesthetic preferences of that time and during the 1920s the designer Rudolf Wille (1873-1948) evolved the design of the top-lit lamp which takes the form of a two-tiered cupola on a mast which resembles a slender Gothic colonette. The 1920s design was modified in the 1930s into a three-tiered cupola and was used in many other German cities at that time. This three-tiered version was also very popular in the 1950s and 1960s, and numerous examples survive in the streets and squares of western suburbs of Berlin to this day. They have a great deal of charm and add to the powerful sense of harmonious ensemble together with the architecture of the houses, the well-designed pavements and the abundant planting of trees.

In the period following the Second World War there was a need to respond to a much greater volume of motor traffic and a larger scale of streets and street junctions. In 1953 the firm GASAG began to produce the in-line lamps (*Gas-Reihenleuchte*), model number U13, on curvaceous posts which were thought to look rather like whips, so these were referred to as *Peitschenmasten*. A great advantage of this model is that the masts can be varied in scale, to match the scale of the street or situation, and have any number of gas mantles between three and eleven. The lamps with the larger number of mantles produce a very strong light and are equal to virtually any urban street situation. There is no sense in which these are inferior to electric lamps in terms of power or effectiveness.

Since 1882 Berlin has had both substantial gas and electrical street lighting systems working in parallel, which is also unique in the world. In the exceptional circumstances of the period following the Second World War the government of West Berlin made a conscious decision – political, social, economic and environmental -- to retain and develop both systems, which was in part a statement of independence from the policies of the German Democratic Republic. The government of the reunited Berlin made a similar decision in the early 1990s, following the reunification of the Two Germanies in 1990.

It cannot be emphasised too strongly that the overriding significance of the Berlin Gas Lighting System is that it is a *working system* with almost two centuries of existence and tradition behind it. Moreover, it is a working system that has been continually added to in successive waves of technical improvement and new designs of lamps and lanterns. As in the City of Westminster, this is a process

that should continue, while retaining the core designs and characteristics. All technical aspects have continued to improve, and should go on improving, becoming more energy efficient and long-lasting. There is also a wealth of expertise in inspecting, maintaining and improving the system – managing it is as a collective working World Heritage Site would not be a challenge from that point of view.

APPENDIX 2 - my career and background

My career as a *Denkmalpfleger* has alternated between being a practical heritage conservator and an academic. As Director of the Centre for Conservation Studies at the University of York I was responsible for teaching MA and Doctoral conservation students from many different countries. As Director of Conservation for the National Trust for Scotland (and in an earlier role as Director of the national advisory bodies for churches and cathedrals in England) I was able to put theory into practice across a wide spectrum of heritage, cultural and natural, architectural, archaeological, historical and artistic. Later I deepened my international experience and my love of German heritage by becoming from 2007 to 2012 Visiting Professor of Cultural Management, on a half-time basis, at the BTU Cottbus where I was responsible for teaching five courses within the well-respected *World Heritage Studies* programme. These included *Heritage Tourism, Researching & Writing Conservation Management Plans for Heritage Sites* and *Funding the Heritage*. Currently, I am an independent consultant on arts and heritage, specialising in the conservation of stone and metals in one capacity and in another capacity advising on numerous aspects of the conservation of historic country houses and designed landscapes. Currently I am advising on a regular basis Lincoln Cathedral, Hopetoun House and the House of Falkland, all three being of exceptional importance from a heritage point of view.

APPENDIX 3 - survivals of gas lamps and lanterns in use in the UK

- Some c.1,400 gas lamps and lanterns survive in the City of Westminster, including Green Park, St James's Park and other representative places, and in the bustling inner-city environment of Covent Garden.
- In Nottingham gas lamps still light 'The Park', a late 19th century suburb close to the Castle.
- In Cambridge, gas lamps still light one entire street, Millington Street, and individual or small groups of lamps or lanterns survive in several other streets.
- In front of the west facade of York Minster, one of the great medieval architectural masterpieces of all England, gas lighting is still provided by a magnificent late 19th century candelabrum.
- In Malvern, a spa town in Worcestershire, in the English west midlands, 104 gas-lit street lamps have survived from the 1920s. Local people cared about them to such an extent that a highly-effective action group was formed by members of the local community to repair them and also to make them more efficient by 84%. Malvern is one of a growing number of towns in Britain which call themselves 'transition towns', that is towns which are 'in transition' from being energy wasteful to being environmentally sensitive and efficient in ways which affect the whole local population. Steps taken to improve their gas lamps include: installing electronic timing units (as in Berlin); installation of more efficient gas burners; application of reflective surfaces, to make more of the light sources; as the local newspaper, *Worcester News*, reported in January 2011 'Given the fact that biogas is becoming increasingly available to consumers in the UK, and knowing that a preference for appropriate technology

encourages resilience, the most romantic, culturally appropriate, solution might just be the greenest one too'. What has been happening in Malvern in recent years carries immense significance for the working system of gas lighting in Berlin and in all those other cities in the world which have preserved some of their gas street lighting in use. The significances are these: (i) gas street lighting can, with the ever-increasing availability of more advanced technology, be made the greenest solution of all available options; (ii) historic gas lighting is recognised as being of high cultural value; (iii) local communities, which include people with considerable technical know-how and skills, are able to work with local government authorities to repair and enhance the efficiency of gas lighting by almost 100%; (iv) saving and improving gas lighting is extremely popular with local electorates. This involvement of local communities is a contributory factor in recognising intangible heritage values, see Section 12 below.

- I have come across no evidence that in the UK the use of gas lighting is considered to be dangerous, harmful to health or more polluting of the environment than electric lighting. Where it survives it is cherished. The Edinburgh World Heritage Trust is seeking to replicate the design of a significant number of gas lamps in the 'New Town' which seems an appropriate gesture of respect towards the particular 18th-early 19th century architectural character of the Edinburgh World Heritage site.
- Conclusions - (i) gas lighting is still favoured over other modes of lighting for heritage locations of special value, and (ii) where it survives in domestic streets, as in Cambridge, Malvern or Nottingham, it is specially prized for the sweet quality of clear light that it gives and for the intangible value of the aesthetic pleasure that it provides, and (iii) it fulfils the Enlightenment criteria of combining the 'useful and the beautiful', and (iv) there seems to be no impediment to retaining gas lamps and lanterns in parallel with streets or buildings lit by electricity, and (v) the adage of 'not putting all one's eggs in one basket' seems peculiarly relevant as the costs of producing gas and electricity rise and fall as with any other commodity.

APPENDIX 4 - Edinburgh has unfortunately not preserved any gas lamps or lanterns in use

- However, there are still three surviving specimens of the exemplary fluted lamp-posts of 1827 designed by William Burn (1789-1870) who, just as Schinkel was the leading architect in Prussia, was a leading architect in Scotland in the early 19th century. The posts and the lanterns they were designed to support can be seen in numerous 19th century photographs.
- In 1824 William Burn had previously designed the Edinburgh Gasworks at Tanfield, Canonmills, which was visited and mentioned by Schinkel in his diary of his visit in 1826.
- In the Edinburgh 'New Town', part of the Edinburgh World Heritage site, 18th century oil lanterns incorporated into the ubiquitous street railings were converted to gas and from around 1820 magnificent special lanterns were designed from the beginning to be lit by gas, many examples being preserved in St Andrew Square, George Street, and elsewhere.
- As with most European towns and cities, elegant gas lamps and magnificent lanterns and candelabra in use for gas lighting can be seen in archive photographs from c.1850 onwards until after the 2nd World War.

- Looking back, gas lamps and lanterns in British towns and cities are perceived by those older citizens who remember them to represent an incredibly special phase in the development of street lighting.
- The introduction of electrically-powered street lamps and lanterns, largely from the 1920s onwards, as with other forms of public and domestic technology, was admired on account of its 'modernity' and its seeming super-efficiency, though time and experience have shown that electric lamps and lanterns need as much or more maintenance and replacement to keep them clean and functioning than gas lamps and lanterns.
- As in most British towns and cities, gas lamps and lanterns have often been converted to electricity because of their visual beauty and their fine design and craftsmanship. One unfortunate consequence of that is that many people look at a historic gas lamp converted to electricity and suppose that the change – if they recognise it at all – is merely superficial. The distinction has become blurred. Some towns and cities, Lincoln is one, have gone one stage further and have commissioned new electric street lamps designed to look exactly like their historic former gas lamps: on the one hand this is recognition that the design qualities of gas lamps are on the whole more harmonious, especially in a historic context, than the design of electric lamps – but on the other hand this seems like treating street lighting as a sort of 'heritage prop' which looks like one thing and is in fact another. New electric street lighting should rather look like what it is, but at the same time be beautifully designed, as much domestic electrical lighting is.