Visual Impact Study (VIS) of the “Verkehrszug Waldschlösschenbrücke” on the UNESCO World Heritage Site “Dresden Elbe Valley“
third revised version

Institute of Urban Design and Regional Planning
RWTH Aachen University
## Contents

1. **Introduction**  
   1.1 Background to the study  
   1.2 Purpose of the study  
   1.3 Structure of the study  
   1.4 Conditions of the study  

2. **World Heritage Cultural Landscape: Dresden Elbe Valley**  
   2.1 Notes on some landmarks in the history of the “Dresden Elbe Valley”  
   2.2 Area covered by the UNESCO World Heritage Site “Dresden Elbe Valley”  
   2.3 Criteria for inscription of the Dresden Elbe Valley in the UNESCO World Heritage List  
   2.4 Conclusion  

3. **The Elbe Valley between Loschwitz Bridge and Albert Bridge**  
   3.1 Specific study area  
   3.2 History of urban development in the area under study  
   3.3 The topography of the Elbe meadows  
   3.4 View of the Elbe river bend between Albert Bridge and Loschwitz Bridge  
   3.5 Conclusion  

4. **Perception and depiction of the study area in different periods**  
   4.1 Artistic representation  
   4.2 Images for tourism  
   4.3 Conclusion  

5. **The planned “Verkehrszug Waldschlösschenbrücke“ in the context of the Dresden Elbe Valley’s cultural landscape**  
   5.1 Historical plans for Elbe bridges at the Waldschlösschen site  
   5.2 The development of plans for the “Verkehrszug Waldschlösschenbrücke“  
   5.3 Building specifications for the “Verkehrszug Waldschlösschenbrücke“  
   5.4 Bridges in the Dresden Elbe Valley  
   5.5 Conclusion  

6. **Analysis of field-of-view impact**  
   6.1 Technical approach  
   6.2 Photographic quality  
   6.3 Selection of the viewing positions  
   6.4 Evaluation of the field-of-view analyses  
   6.5 Conclusion  

7. **Conclusions and Recommendations**  

8. **Sources/ Picture credits**  

9. **Imprint**
1 Introduction

1.1 Background to the study
For more than ten years, the city council of Dresden has been planning to create an additional Elbe crossing near the Waldschlösschen site to the east of the inner city, a project titled “Verkehrszug Waldschlösschenbrücke” [Waldschlösschen Bridge thoroughfare]. These plans are not new; the intention of building an additional bridge across the Elbe on this site has surfaced repeatedly in the city’s urban planning history (see chap. 5, section 5.1). The project was still in the planning stage when the Dresden Elbe Valley was inscribed in the UNESCO World Heritage List, which the city had applied for in January 2003.

The documents supplied as part of the World Heritage Site application also included information on the planned “Verkehrszug Waldschlösschenbrücke”. On the basis of the supplied documentation and a statement by the Landesamt für Denkmalpflege Sachsen [Saxony State Office for Historic Preservation] provisionally supporting the plans for the new thoroughfare, the envisioned Waldschlösschen Bridge was not deemed an obstacle when the Dresden Elbe Valley was evaluated for acceptance onto the UNESCO World Heritage List in 2004.

On 24 November 2005, the International Council for Monuments and Sites (ICOMOS), advisory body to the UNESCO World Heritage Committee, received further information regarding the bridge as part of the planning approval documentation. This also included research into possible tunnel solutions (source: ICOMOS statement, 17 January 2006). Based on the updated state of information, ICOMOS is now claiming that the supporting documentation provided by the Dresden city council as part of its application to the UNESCO World Heritage List was “insufficient” and incomplete. In the statement from 17 January 2006, ICOMOS INTERNATIONAL concludes, that “by all means there should now be a pause for thought to have the opportunity to inform the World Heritage Committee [...].”

1.2 Purpose of the study
In order to establish evaluate whether or not and the extent to which the “Verkehrszug Waldschlösschenbrücke” will interfere with the visual integrity of the protected Dresden Elbe Valley, the UNESCO World Heritage Centre in Paris called for a visual impact study. With the approval of the Dresden city council, the German UNESCO Commission outsourced the study to the Institut für Städtebau und Landesplanung / RWTH Aachen [Department of Urban Design and Regional Planning / RWTH Aachen University].
This independently conducted study into the visual impact of the “Verkehrszug Waldschlösschenbrücke” has the purpose of examining all the possible consequences that the planned construction project may have on the outstanding universal value, authenticity and integrity of the “Dresden Elbe Valley” World Heritage Site. The study takes the guidelines set out in the Vienna Memorandum on “World Heritage and Contemporary Architecture – Managing the Historic Urban Landscape” into consideration.

The Vienna Memorandum was passed as a result of the international UNESCO conference “World Heritage and Contemporary Architecture”, held in Vienna in May 2005. It responds to the ongoing conflict between the inevitable changes and developments which urban landscapes face as a result of new societal and economical requirements, and the necessity of conserving cultural heritage to maintain their characteristic identity. In the ever recurring conflict between the opposing forces of progress and conservation, the Vienna Memorandum aims to act as a “key statement for an integrated approach linking contemporary architecture, sustainable urban development and landscape integrity based on existing historic patterns, building stock and context.” Having named and defined a set of principles, guidelines and tools, the Vienna Memorandum represents a call for the existence of certain planning and decision-making processes to be applied when historic urban landscapes inscribed on the World Heritage List are modified and developed. These processes are to be informed by a sensitivity towards historical and cultural values, by a meticulous approach to documentation and factual analysis, by a sensitive approach and concept development, by a careful assessment of impact and consequences, by timely and comprehensive public announcements, and by in-depth communication between all parties involved. In processes thus qualified, professional competence and the responsibility for balanced decisions and actions go hand in hand.

In the case of new construction projects, therefore, the Vienna Memorandum aims to achieve planning processes where impact assessment is conducted as an integral part of concept development. Detailed research into visual impact has so far been neglected in the planning of the “Verkehrszug Waldschlösschenbrücke”, and as a result, visual impact has not been adequately addressed in the overall assessment of the project – especially taking into account the importance of the site’s visual appearance in light of its World Heritage status. For this special status entails the obligation to establish sensitivity towards the heritage site as the primary basis for all decision-making processes and actions. This study therefore aims to provide the main data for assessing the visual impact of the “Verkehrszug Waldschlösschenbrücke” on the integrity of the “Dresden Elbe Valley” World Heritage Site.
1.3 Structure of the study

The study consists of several analyses. Each analysis builds on the findings of the others.

a. Analysis of evaluation criteria

(Chapter 2)

This analysis examines the aspects that have contributed to the ICOMOS assessment of Dresden’s Elbe valley as a site worthy of World Heritage status, as well as the criteria that supported the inscription of the Dresden Elbe Valley on the UNESCO World Heritage List. The defined criteria form the basis for assessment of how the planned bridge will affect the site’s visual integrity.

b. Analysis of the affected city and landscape areas

(Chapter 3)

This analysis examines in greater detail that section of the “Dresden Elbe Valley” UNESCO World Heritage Site that is relevant to field-of-view analyses – the bend in the Elbe River between Albert Bridge and Loschwitz Bridge. The historical, natural and architectural qualities of the study area are examined. This analysis aims to capture those characteristic and special qualities of the Elbe river bend that demonstrate and validate its significance as a natural river landscape, as a natural area within the urban landscape, and as a historically evolved area of cultural activity displaying achievements in town planning, landscape gardening, architecture and engineering. The analysis also examines which locations have been established over time that facilitate the viewing and experiencing of the Elbe valley.

c. Analysis of historical and current city- and landscape depictions of the Dresden Elbe Valley

(Chapter 4)

This analysis examines historical depictions of the city and landscape, supplemented by a brief overview of the most important postcard motifs and comments on images of Dresden used in the city’s promotional materials. The analysis aims to establish how the views of the Dresden city outline and environs, particularly those relating to the Elbe river bend, were developed by different artists over time, which landscape features were and are most characteristic in the artistic representations of the area, and which views and vantage points have played an important role.

This chapter furthermore examines if the “classic” city and landscape views rooted in the public consciousness of the inhabitants of and visitors to Dresden and the
Elbe Valley will be changed by the construction of the planned “Verkehrszug Waldschlösschenbrücke”.

d. Visual and technical analysis of the “Verkehrszug Waldschlösschenbrücke”
(Chapter 5)

This chapter describes the “Verkehrszug Waldschlösschenbrücke” itself – its planning history, geographical location, dimensions and scale, design, technology and construction requirements. This is supplemented with an examination of the existing bridges in the Dresden Elbe Valley. Their scale and distinguishing features are described alongside their typology. This supplementary examination serves to provide a context within which the planned “Verkehrszug Waldschlösschenbrücke” can be compared in terms of the design and dimensions of the current Dresden Elbe Valley bridges.

e. Field-of-view analyses
(Chapter 6)

A number of vantage points for analysing relevant fields of view were identified within the study area based on the study team’s on-location explorations by car and on foot. The identified viewing points were then compared to the study’s previously conducted research, and upon verification used as the source locations to take the photographs for the required field-of-view analyses. These photographs form the basis for a truthful simulation of the planned bridge project and a realistic comparison between the current and planned topography of the area. After the scientific generation of the field-of-view analyses, the evaluation of these represents the most important part of the study; it is the primary basis for assessing the visual impact of the planned bridge construction project.

1.4 Conditions of the study

Due to political and legal circumstances, the time span allotted to the visual impact study had to be very short. The study was commissioned on 9 February 2006 and had to be completed by 15 March 2006. As this was a very tight deadline, the authors had to limit their analyses to aspects that were directly relevant to the visual impact study. On the one hand, this approach displays a strong focus towards producing the required field-of-view analyses for the locations selected; on the other, it also provides an overview of the many-layered nature of this issue and the complexity of the planned construction project.
In the time allowed for the study (February/March), it was not possible to wait for the best possible meteorological conditions to take the photographs required for the field-of-view analyses. A time later in the year certainly would have been more conducive to producing photographs that better represent the characteristic landscape features of the Dresden Elbe Valley and demonstrate the full extent of the panoramic views it has to offer. However, this had no effect on the actual production of the field-of-view analyses and the evaluation thereof – as the analysed fields of view correspond to natural human vision, it was possible to truthfully project the planned thoroughfare onto the landscape.

The authors of this paper were given the task of producing an independent study to assess the visual impact of the tendered “Verkehrszug Waldschlösschenbrücke” on the uniqueness of the Dresden Elbe Valley, a protected World Heritage Site. Accordingly, the study and the analyses conducted for it focus predominantly on the natural and urban landscape qualities inherent in the Dresden Elbe Valley. The purpose of the study was not in any way to assess the feasibility of the planned traffic route or construction project. Similarly, the study does not aim to address the aforementioned issue of how complete and correct information provided to UNESCO regarding the “Verkehrszug Waldschlösschenbrücke” was in Dresden’s initial application to the World Heritage List.
2 UNESCO World Heritage Cultural Landscape: Dresden Elbe Valley

2.1 Notes on some landmarks in the history of the “Dresden Elbe Valley”

The UNESCO World Heritage Site “Dresden Elbe Valley” is not the result of a single brilliant idea or of an outstanding piece of planning, but of a centuries-long tradition of respect and care for this unique natural landscape, and of the cultural valorisation of this setting by means of park and garden design, urban planning and architecture. Many different aspects of the Dresden Elbe Valley reflect this background – a kind of unwritten convention, which aristocrats, politicians and ordinary citizens observed as a matter of course. And it is the special combination of beauty and diversity of landscape with cultural riches within a big-city context that constitutes the uniqueness of this cultural landscape.

Some key elements of the inscribed World Heritage Site go back to August the Strong (1694 - 1733). With the Venetian model in mind, he saw the Elbe as another “Grand Canal” and wanted the show sides of the prestige buildings to face the river. He also constructed a gondola mooring place upstream, adjacent to the fortress. (City of Dresden Planning Application documents, serial no. 6). It was at this time that the natural setting of the Elbe Valley from Pillnitz Palace to Übigau Palace was given its cultural value and form by Baroque architecture and landscaping. These two palaces represent the two extremities, or “poles”, of the preserved cultural landscape known as “Dresden Elbe Valley”. Dresden now became an Electoral residence city of European standing.

From the end of the 18th century, the river grew steadily in importance as a shipping route. Towpaths were created on both banks for hauling vessels upstream. From 1850 onwards, the Elbe’s course was subjected to extensive changes (removal of islets, re-alignment of tributaries, provision of flood overflow channels, etc.), necessitated by the introduction of steamships.

In spite of advancing industrialisation and a massive rise in population at the end of the 19th century, it was decided that the River Elbe should not be canalised. In the early 1870s, having undertaken detailed technical studies of the water flow, and pointing out the consequential costs that would result from walling the river banks, the regional waterworks director of the time, M oritz Wilhelm Schmidt, succeeded in overruling a whole phalanx of experts. (Laudel, Heidrun, page 2)

During the 19th century, once the old fortifications had been demolished, the city of Dresden grew in ribbon fashion along both banks of the “Elbe artery”, without inflicting
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200</td>
<td>Castle on the Taschenberg</td>
</tr>
<tr>
<td>1206</td>
<td>Earliest documentary reference - as “Dresdene”</td>
</tr>
<tr>
<td>1272</td>
<td>First mention of a wooden bridge</td>
</tr>
<tr>
<td>1546-91</td>
<td>Construction of fortifications</td>
</tr>
<tr>
<td>1548-93</td>
<td>Construction of royal palace</td>
</tr>
<tr>
<td>1632</td>
<td>Fortification of Altendresden</td>
</tr>
<tr>
<td>1685</td>
<td>Earliest integrated development plan</td>
</tr>
<tr>
<td>1710-32</td>
<td>Zwinger</td>
</tr>
<tr>
<td>1715 on</td>
<td>Japanese Palace</td>
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<tr>
<td>1720 on</td>
<td>Pillnitz Palace</td>
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<tr>
<td>1724-26</td>
<td>Übigau Palace</td>
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<tr>
<td>1726-38</td>
<td>Frauenkirche (Church of Our Lady)</td>
</tr>
<tr>
<td>1739-51</td>
<td>Hofkirche (Court Church)</td>
</tr>
<tr>
<td>1837</td>
<td>Saxon-Bohemian steamship company founded</td>
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<tr>
<td>1839</td>
<td>Dresden – Leipzig railway opened</td>
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<tr>
<td>1844</td>
<td>decision to improve navigability of Elbe (Additionalakte)</td>
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<td>1845</td>
<td>Elbe flood of the century</td>
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<tr>
<td>1850 on</td>
<td>extensive alterations to river course</td>
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<tr>
<td>1852</td>
<td>Marien Bridge</td>
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<tr>
<td>1851-54</td>
<td>Albrechtsberg Castle; Villa Stockhausen</td>
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<tr>
<td>1859-61</td>
<td>Eckberg Castle</td>
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<tr>
<td>1871-78</td>
<td>Semper Opera House</td>
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<tr>
<td>1875</td>
<td>Albertbrücke (Albert Bridge)</td>
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<td>1893</td>
<td>Loschwitz Bridge (‘Blue Wonder’ bridge)</td>
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<td>1895</td>
<td>funicular railway at Weisser Hirsch</td>
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<tr>
<td>1901</td>
<td>Loschwitz suspension cable railway</td>
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<tr>
<td>1946</td>
<td>planning for rebuilding of Dresden</td>
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<tr>
<td>1963</td>
<td>rebuilding of Zwinger</td>
</tr>
<tr>
<td>1985</td>
<td>rebuilding of Semper Opera House</td>
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<tr>
<td>1986 on</td>
<td>rebuilding of Schloss (Castle)</td>
</tr>
<tr>
<td>1994 on</td>
<td>rebuilding of Frauenkirche</td>
</tr>
<tr>
<td>1994</td>
<td>Saxon Parliament</td>
</tr>
<tr>
<td>2001</td>
<td>New Synagogue</td>
</tr>
<tr>
<td>2002</td>
<td>Elbe flood of the century</td>
</tr>
<tr>
<td>2005</td>
<td>Consecration of the Frauenkirche</td>
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**Figure 2.1**
Timeline for the history of Dresden

Source: author’s illustration
lasting changes on the Elbe landscape. There was no building development on the flat Elbe meadows, which were natural floodplains helping to absorb the river's recurrent flooding.

Such new building development as did take place from the mid-19th century onwards, to the east of the Altstadt and the Neustadt, remained at a “respectful” distance from the river, and harmonised with the surrounding landscape. The lines of the Elbe hillsides were brought into play as the backdrop for the keynote buildings such as the Elbe palaces. “Additionally, to preserve the sightlines and the characteristic settlement pattern, development of industrial premises with steam boiler installations and tall chimneys along the Elbe was prohibited.” (Application for UNESCO World Heritage status for the “Dresden Elbe Valley” cultural landscape, page 15)

In the 1920s, city building officer Paul Wolf (1879 - 1957) introduced the concept of the Gesamtkunstwerk or total work of art. In his “Buch der Stadt Dresden 1927/28” (Book of the City of Dresden 1927/28), city building officer Wolf declared that he saw it as his “undoubted duty to protect the precious testimony from the past, the features around us that bear witness to the life and work of the vigorous epochs that preceded us, with the aim of handing these things on intact, as far as that is possible, to the generations to come”. He insisted that special care should be taken to safeguard “the landscape values and the green areas with which Dresden and its environs are abundantly provided.” Development planning policy in Dresden, he felt, “must deliver the guarantee that the future city will come across as a total work of art.” (Dresden – Europäische Stadt, page 30)

Many earlier planners had in fact already given tangible expression to this aspiration, for instance through the 19th-century development plans and building regulations that preserved the historic cityscape. A building ban imposed by royal decree in 1826, affecting the eastern suburbs Pirnaische Vorstadt and Äußere Pirnäische Vorstadt (the later Johannstadt), was still being implemented in the late 1850s. The authorities of the time were all agreed that Dresden’s reputation as one of “the most beautiful of all cities” could only be maintained if the “friendly aspect” of the city, “with the promenade to the Grosser Garten (Great Garden) and the beautiful view towards the Loschwitz Hills” were kept open. (Laudel, Heidrun, page 2)

In the year 1900, a “building ban effective in the past” – in fact since 1787 – was extended “with respect to any development of the Waldschlösschen meadow or any part of it, in perpetuity.” (Laudel, Heidrun, page 3). Further details of the background to this detail are provided in Chapter 3, section 3.3., p. 35.
Augustus the Strong presents the Elbe Valley from Pillnitz Palace to Übigau Palace as a kind of “Grand Canal”.

Building ban imposed on the suburbs Pirnaische Vorstadt and Äußere Pirnaische Vorstadt (later called Johannstadt)

Decision against canalisation of the Elbe (M.W. Schmidt, Regional Director of Waterworks)

Ban on building anywhere on the Waldschlösschen meadows, in perpetuity

City building officer Paul Wolf introduces the concept of the “total work of art”.

Preservation order for the Elbe river area (Elbe Preservation Act)

The GDR signs up to the UNESCO Convention on the Protection of the World Cultural and Natural Heritage.

Institut für Denkmalpflege (Institute for the Preservation of Monuments) works up proposals for potential World Heritage Sites.

Application for listing of the historic centre of Dresden (the ensemble of Theaterplatz and Brühl Terrace, along with the Zwinger, the Opera, the Roman Catholic Hofkirche, the Castle and the art and science collections). The application is rejected, the rebuilt monuments being deemed insufficiently authentic in terms of original fabric.

The Conference of (German) Ministers of Education and Cultural Affairs recommends listing of the Dresden Elbe Valley (application by 1st February 2003).

Formation of a working group (from the Departments of Town Planning, Preservation of Monuments, Environmental and Nature Conservation and Economic Development) to prepare the application for listing

Application documents substantially complete

Discussion of implications of listing for economic development

Application for World Heritage status

Evaluation by ICOMOS (Jukka Jokiletho)

Inscription of the Dresden Elbe Valley as a “continuing cultural landscape” in the World Heritage List on the basis of Criteria II, III, IV and V of the “Guidelines for the Implementation of the Convention Concerning the Protection of the World Cultural and Natural Heritage”.

Source: Online Magazine of the German UNESCO Commission, no. 9, September 2004 and author’s illustration
With the Saxon legislature's Preservation of Monuments Act of 1934, the concept of monument preservation was extended for the first time to “city districts of special significance in respect of town planning, residential design or local sentiment”. The Elbe River area was granted official protected status for the first time in 1941 (Elbeschutzgesetz – Elbe Preservation Act).

The devastation brought by the Second World War was largely confined to the historic centre of Dresden. There was hardly any damage to the building fabric of the Gründerzeit suburbs. Although the reconstruction planning of the GDR period negated the historic city layout, surviving fragments of historic buildings were in fact secured, and some reconstructive rebuilding was undertaken. Since German reunification, too, it has been possible for the most part to cope with the development pressures in the Elbe River area without damage to the historic cityscape. Recently, the reconstruction of the Frauenkirche (Church of Our Lady) has restored the city's famous Baroque silhouette. Extensive urban rehabilitation programmes are “repairing” the destroyed urban structure. Developments in the immediate river area during the last few years respect and complement the historic “urban landscape”. The integrity of the cultural landscape remains preserved.

The Dresden Elbe Valley is also notable for its high-quality natural areas and protected biotopes such as the Elbe island at Pillnitz.

The Dresden Elbe Valley is now protected by a whole range of planning and building regulatory instruments and environmental protection legislation, such as conservation orders, orders for the preservation of monuments, landscape protection plans and zoning maps.

In July 2004, the “Dresden Elbe Valley” was inscribed on the World Heritage List as a “continuing cultural landscape”.

2.2 Area covered by the UNESCO World Heritage Site “Dresden Elbe Valley”

The cultural landscape of “Dresden Elbe Valley” derives its cultural character from “[... ] fortifications from the Renaissance period and the Baroque buildings of the Saxon Elector's residence city, together with the impressive 19th-century bourgeois architecture, the extensive villa districts in the suburbs, the traditional vineyards on the edge of the city, the natural environment on the wooded Elbe slopes, and the river itself with its continuous undeveloped meadowland stretching along both banks.” (Application documents, serial no. 1, page 2).
Figures 2.3, 2.4
Boundaries of the registered area of the UNESCO World Cultural Heritage Site “Dresden Elbe Valley” representation

Source: Saxon State Capital City of Dresden, Denkmalschutzamt (Dept. of Preservation of Monuments) / author’s illustration

Source: Städtisches Vermessungsamt (City Surveyor’s Dept.), Dresden
The core zone of the area inscribed in the World Heritage List comprises the Elbe Valley over a distance of 19.5 kilometres between Übigau Palace in the north-west and Pillnitz Palace in the south-east, the Elbe slopes along the river, the cultural landscape with its combination of village and bourgeois settlement patterns, the aristocratic town centre (Zwinger, Brühl Terrace, Semper Opera, Frauenkirche) and monuments from the 19th-century period of industrial expansion. Two buildings of modern architecture by the river, the Saxon State Parliament and the New Synagogue, are explicitly included in the “Dresden Elbe Valley” World Heritage Site.

The entire central part of the Altstadt, the central part of the Neustadt and the harbour area south of the Ostragehege are among areas designated as buffer zones.

### 2.3 Criteria for inscription of the Dresden Elbe Valley in the UNESCO World Heritage List

The Dresden Elbe Valley was inscribed in the UNESCO World Heritage List in July 2004 on the basis of Criteria II, III, IV and V of the “Guidelines for the Implementation of the Convention Concerning the Protection of the World Cultural and Natural Heritage”. This recognises that the historic cultural landscape of “Dresden Elbe Valley” possesses “outstanding universal value” which must be preserved for future generations.

Under Article 1 of the 1972 Convention Concerning the Protection of the World Cultural and Natural Heritage (the UNESCO World Heritage Convention), the “Dresden Elbe Valley” cultural landscape is a “site”; under the “Guidelines for the Implementation of the Convention Concerning the Protection of the World Cultural and Natural Heritage” it is a “continuing cultural landscape”.

The World Heritage Committee regards a property as being of outstanding universal value (see Guidelines nos. 49–53) if it conforms to one or more of the ten criteria recognised in the Guidelines as constituting a basis for qualification as World Cultural Heritage.

On the basis of the ICOMOS recommendations of March 2004, the “Dresden Elbe Valley” fulfils the following four criteria (source: online-Magazin der Deutschen Unesco-Kommission, number 9, September 2004):

Under Criterion II, “The Dresden Elbe Valley has been the crossroads in Europe, in culture, science and technology. Its art collections, architecture, gardens, and landscape features have been an important reference for Central European developments in the 18th and 19th centuries.” (and more)
The cultural landscape “Dresdner Elbe Valley” therefore meets the following four criteria:

i) Nominated properties shall therefore,

ii) 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;

iii) bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;

iv) be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;

v) be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change;..."
Under Criterion III, “The Dresden Elbe Valley contains exceptional testimonies of court architecture and festivities, as well as renowned examples of middle-class architecture and industrial heritage representing European urban development into the modern industrial era.” (and more)

Under Criterion IV, “The Dresden Elbe Valley is an outstanding cultural landscape, an ensemble that integrates the celebrated baroque setting and suburban garden city into an artistic whole within the river valley.” (and more)

Under Criterion V, “The Dresden Elbe Valley is an outstanding example of land use, representing an exceptional development of a major Central European city. The value of this cultural landscape has long been recognized, but it is now under new pressures for change.” (and more)

2.4 Conclusion
The unique feature of the “Dresden Elbe Valley” cultural landscape is the symbiosis of natural landscape, landscape management, land use, urban planning and architecture which has resulted in the preservation of a continuous landscape area within the city.

The Dresden cityscape, with the River Elbe as an integral feature, is not only imprinted on our collective memory – in painting and in literature – but also still continues in our own day to exert a decisive influence on the city’s further development. It was in part a consequence of the tradition of respect for the urban and natural setting, and of the rich and diverse valorisation of this setting over many epochs that the Dresden Elbe Valley was, in July 2004, inscribed in the World Cultural Heritage List as a “continuing cultural landscape”.

The following discussion will assess whether the special qualities of this cultural landscape would be impaired by the proposed Waldschlösschen Bridge and whether the construction of such a bridge would be compatible with the World Heritage definition of a “continuing cultural landscape”.
Figure 3.1
Boundaries of the specific study area

Source: author’s illustration/aerial photo, Saxony Surveying Office
3  The Elbe Valley between Loschwitz Bridge and Albert Bridge

3.1 Specific study area
The prospective “Verkehrszug Waldschlösschenbrücke” is only visible in a certain section of the “Dresden Elbe Valley” UNESCO World Heritage Site. Because it is located at the northern-most part of the bend in the Elbe between Albert Bridge and Loschwitz Bridge, the bridge will primarily be visible in this area and will influence the appearance of the river bend south of the Elbe castles. This landscape, which is clearly demarcated on the east and west by the two bridges, is the specific area of analysis of this report and will provide the basis for further stages of analysis. The northern and southern borders form the boundary of the UNESCO World Heritage Site “Dresden Elbe Valley”, i.e. the core and buffer zone on the right and left side of the Elbe.

The natural scenery between Albert Bridge and Loschwitz Bridge is characterized by the northward bend in the river, the wide Elbe meadows and the terraced slopes of the northern bank. This area features less development than the area of the river bend between Altstadt and Neustadt (the Old Town and the New Town).

The undeveloped area of the Elbe between Bautzner Strasse and Käthe-Kollwitz-Ufer is characterized by a distinctive river bend and unusually wide floodplains, which measure 750-800 m at their widest point. No other urban area in Europe boasts a floodplain of this shape and size. Near Albert Bridge and Loschwitz Bridge, the floodplains narrow to approximately 250-400 m. The Elbe floodplains in the area studied are very close to the city centre and are therefore an extremely popular local recreation spot. The natural border provided by the Elbe hillside creates a clearly defined landscape which resembles an “amphitheatre”. This effect is created by the clear contrast between the river's northern slope, which is for the most part heavily forested, and the expansive, open Elbe meadows on the other side. The result is a highly distinctive topographical ensemble.

3.2 History of urban development in the area under study
The main urban developments in the areas surrounding this region occurred during the 19th century. After the fortifications were dismantled in the mid-18th century the nucleus of the present Dresden city centre gradually merged with the centres of outlying villages in the surrounding countryside. In the 19th century, an incipient industrialization
Figure 3.2
Maps depicting city development

Source: State Capital of Dresden
took place along with an enormous increase in population, so that by the end of the 19th century Dresden had developed into a large city. During this growth process, industries and trades were heavily concentrated in their traditional locations west of the Altstadt (Friedrichstadt) and the north of the Altstadt, in connection with the „military town“ situated there. East of the Altstadt and Neustadt as well as in the near vicinity of the bend of the Elbe between Loschwitz Bridge and Albert Bridge, new residential areas evolved.

The topographical conditions of the Elbe Valley played a central role in this growth process. While the Elbe Valley basin on the right bank of the Elbe along the Elbe slopes allowed only a limited expansion of the city, a greater potential for development existed on the left bank because of its flatter relief. During the course of its growth process the city constantly expanded into this area. Alongside the mediaeval radial structure of the Dresden city centre, a strip of residential housing running along the Elbe between the railroad line and river gradually evolved. These diverse developments shape the urban structure of Dresden to this day.

The Prussian Quarter
(South of Bautzner Strasse core zone, or buffer zone of the UNESCO World Heritage Site)

In the 19th century, Dresden developed into the third largest garrison of the Prussian-German Empire, resulting in the construction of a barracks compound northeast of the city. Housing for officers and their families was located in the immediate vicinity of the barracks in the so-called “Prussian Quarter“ between the densely built-up outer Altstadt and the Loschwitz Elbe slope on slightly inclined terrain. The urban structure of the quarter consists of a continuous pattern of wide streets and two- and three-story villas. The homogeneity of the urban structure and its conformance with the topography are due to the careful development of the villa quarter. Development plans provided for open construction, architectural styling, development of land enclosures and the planting of trees along avenues.

In the course of this development, the northern slopes of the Elbe east of Neustadt were constantly being reshaped. Numerous villas were built along Bautzner Strasse between 1840 - 1870, which profited from the southern-exposed slope location and the view onto the river and the old town. The “Villa Rosa“ residence was a distinctive part of this ensemble. Designed by Gottfried Semper, the villa was also built on Bautzner Strasse in 1840, although it was destroyed in WW II. This residence in Semper’s neo-Renaissance style set the standard for many other “town villas“ of the type frequently encountered in the Dresden Elbe Valley.
Figure 3.3
Dresden city map, 1898
Source: State Capital of Dresden

Figure 3.4
Gustav Täubert, Das Linkesche Bad in Dresden
Source: Carl Maria von Weber und Dresden, Fotografische Erkundungen von Hans Strehlow (photographic research by Hans Strehlow), Verlag der Kunst Dresden

Figure 3.5
Gustav Täubert, Das Waldschlösschen
Various other places of interest were developed along Bautzner Strasse. Emerging east of Neustadt as early as 1817 was the “Theater am Linkeschen Bad” used for opera and theatre performances and situated right behind the “Drachenschänke” restaurant of today. From its terrace the building has a clear view of the river.

In 1837, the Waldschlösschen Brewery was built farther up Bautzner Strasse, near the present-day Waldschlösschen Strasse. The name “Waldschlösschen” [Little Forest Castle] goes back to a country house of Count Marcolini built in 1790 on Radeberger Strasse. The Waldschlösschen Brewery became a favourite excursion destination. A steamboat wharf reachable via a promenade (presently the Oberkiesweg) allows direct access from the river. The terrace of the Waldschlösschen Brewery offers an outstanding panorama extending from the Elbe frontage of the old town (Frauenkirche) to the Loschwitz Elbe slopes. This panorama is mainly possible because the Elbe meadows in this area are undeveloped and extend as far as Bautzner Strasse. The Elbe banks and Fetscher Strasse on the opposite side, together with the adjacent buildings, present a characteristic, nearly symmetrical overall composition of the waterside edge of the “Prussian Quarter”, whereby this part of the city is interlocked in a special way with the topography of the Elbe Valley.

The Loschwitz Elbe hillside: Elbe castles and villa communities
(core zone of the UNESCO World Heritage Site)
The Elbe castles adjacent to the eastern edge of the “Prussian Quarter” were built about the middle of the 19th century. Schloss Albrechtsberg and the somewhat smaller Villa Stockhausen, which were built during 1850-1854 in the Berlin late classical style modelled on the villas of the Roman Renaissance, are grouped in a British-style park. The archetype of the Renaissance villas, also inspired by Semper’s Villa Rosa, again shows up clearly in the design of Schloss Albrechtsberg. Extending from this structure to the Elbe is a beautiful terrace with fountains, pools and outside stairways. Villa Stockhausen also has a beautiful terrace which does not, however, extend down to the river. Instead, there is a terraced vineyard with retaining walls reached from the house via an outside stairway.

Schloss Eckberg, erected from 1859 to 1861, stands in sharp contrast to the other two Elbe castles. The castle’s architecture with its irregular outline and elevation is highly romanticized, which is shown by its use of British Tudor Gothic and French Late Gothic forms. It nevertheless has something in common with the other two castles in that it also has a large terrace overlooking the Elbe Valley.
Figure 3.6
Adolf Lohse, Schloß Albrechtsberg, 1850-54

Source: Villenarchitektur in Dresden [Villa architecture in Dresden], Benedikt Taschen Verlag

Figure 3.7
Adolf Lohse, Villa Stockhausen, 1850-53

Source: Villenarchitektur in Dresden [Villa architecture in Dresden], Benedikt Taschen Verlag
The Dinglinger Vineyard east of the Elbe castles is one of the oldest estates in the Loschwitz part of Dresden. It is located east of the three Elbe castles on the Loschwitz hillside. The vineyard with its belvedere is a distinctive feature of the fluvial topography. The Dinglinger Vineyard offers an almost unique panoramic view of the castles and the Elbe river bend.

Many of the original vineyards on the northern slopes of the Elbe near Loschwitz were gradually replaced by villas, after a vine pest infestation in the late 19th century brought an end to viticulture there. On the Loschwitz Elbe hillside, more residences evolved from a square-centred village near the Elbe and from a ribbon-built village along the Loschwitzgrunde. Except for the Körnerplatz these feature an open construction style. Around these villas, which were embedded in parks and spacious gardens, extensive woodlands were developed. To this day, the northern Elbe hillside at this location is defined by the interplay of vineyards and villas surrounded by densely treed areas.

The end of the 19th century saw the development of another villa district on the upper part of the northern Elbe hillside which even included a spa hotel - the Weisser Hirsch Climate Spa. The name “Weisser Hirsch” [White Stag] is derived from a hotel constructed here in 1688. Two mountain railways were built as access to the Weisser Hirsch spa and the new villas on the Elbe hillsides. These are a funicular railway built in 1895 and a suspension railway built in 1901. Both railways are important tourist attractions to this day. The suspended cable railway covers a difference in altitude of 84 meters. The viewing terraces of the suspension railway station offer a wide panoramic view of the Elbe Valley. The Luisenhof Restaurant was built in 1894. Because of its beautiful view of the Dresden city skyline and the Elbe Valley, the restaurant has been nicknamed the “Balcony of Dresden.”
Figure 3.8
Theodor Lehnert,
Photo: The Ehrenstein and Lehnert villas on the Loschwitz slope of the Elbe river, 1856 and 1859-60
Source: Villenarchitektur in Dresden [Villa architecture in Dresden], Benedikt Taschen Verlag

Figure 3.9
Post card: The world's oldest suspension cable railway
Source: DVB AG / M. Fröhlich
Blasewitz
(mainly in the core zone of the UNESCO World Heritage Site)

From 1860, an extensive villa district also evolved across from Loschwitz on the opposite side of the Elbe in the former fishing and farming village Blasewitz. Its proximity to the imperial residence and beautiful view of the Elbe hillsides were important factors in its development. A milestone in the urban development of this district was the establishment of a forest park association which promoted the conversion of the Blasewitz fir forest into a forest park and the construction of a large villa colony on its fringe. A building ban on industrial and business establishments from 1878 supported the quality of its development.

Loschwitz Bridge ["The Blue Wonder"] was built in 1893 to link Loschwitz to Blasewitz. Loschwitz Bridge was one of the first bridges to do without a flow pylon. The two mountain railways on the Loschwitz hillside and the bridge represent an ensemble of groundbreaking “traffic structures.“ In this capacity, these engineering benchmarks play a special role in the development of the cultural landscape of the “Dresden Elbe Valley”.

Apart from the modification of Schillerplatz to accommodate “The Blue Wonder“ approach ramp, the Blasewitz residential area is for the most part characterized by densely treed villa neighbourhoods, especially around the forest park. Schillerplatz and the leafy villa quarter around the forest park make up the nucleus of this quarter. The Barbarossaplatz-Friedensplatz-Lothringer Weg axis leads up to the Elbe meadows and has Schloss Albrechtsberg as its central point of focus. This is one of the most important urban development axes in Dresden. It ends in a lookout point which is styled as a scenic balcony.

The villas in Blasewitz are located on large properties resembling parks. Their diverse range of architectural styles, including historicism, Art Nouveau and different varieties of “Heimatstil” [regional style], make these villas especially unique. This architectural diversity was planned. The villas on the Käthe-Kollwitz-Ufer are highly valuable architectural works with silhouette qualities. Embedded in large parks, the villas are clearly harmonized with the surrounding Elbe landscape. Along with the other “prominent” relationships, this harmony alone underscores the clear interplay between architecture and nature in this section of the Elbe. The corner towers of the multi-storey buildings near Schillerplatz also highlight the gate aspect of the bridge approach and thus refer to the bridge and the river.
Figure 3.10
Development plan, North Johannstadt, 1900

Source:
State Capital of Dresden
Johannstadt
(mainly in the buffer zone of the UNESCO World Heritage Site)
As early as 1858, the decision was made to designate a new development area, Johannstadt, on the left side of the Elbe across from the Prussian Quarter. However, due to the building ban around the “Imperial Large Garden,” the area remained undeveloped until 1874 and contained few houses or other structures. Fairs had traditionally taken place on the Vogelwiese [Johannstadt Elbe meadows]. A wave of settlement began when the building ban was lifted in 1874 and Grunauer Strasse was built in the Pirna suburb. Despite the pressure to build up the area, the first urban development projects were careful to leave a wide strip of the river bank undeveloped.

The development plans for North Johannstadt in 1900 defined and implemented the semi-elliptical Thomas-Müntzer-Platz, which is located directly on the Käthe-Kollwitz-Ufer, leaving a wide strip of river bank open to the city. The plans also envisaged the building of a bridge between Thomas-Müntzer-Platz and the mouth of the river Prießnitz, as well as a semi-circular square at the northern end of today’s Fetscherstrasse. These plans are discussed in greater detail in chapter 5, section 5.1.

This basic sketch of urban developments in the various areas around the bend of the Elbe between the Albert and Loschwitz Bridges allows to draw the following general conclusions:

- The spatial configurations as well as the distinct topography and diversity of this landscape have stimulated urban development and architectural designs which have established a diverse architectural and urban planning heritage. This includes the densely treed villa districts in the lowlands, areas that open out to the river, and carefully planned prominent locations on the hillsides. (Thus the design concepts developed during the reign of August the Strong were continued through many generations until the present day.)
- Even in times of strong growth during the 19th century, architectural heritage and urban planning integrity were maintained. Design was heavily influenced by their relationship to the Elbe river bend, and the expansive Elbe meadows were considered untouchable.
- Different types of building regulations ensured the quality of urban developments and protected topographical features.
Figure 3.11
Theodor Friedrich, photo: The Saloppe waterworks, 1871-75

Source: Villenarchitektur in Dresden [Villa architecture in Dresden], Benedikt Taschen Verlag
3.3. The topography of the Elbe meadows

Like the surrounding buildings, the present-day appearance of the Elbe meadows was largely shaped during the 19th century. Until the end of the 18th century, the river remained in its original state as an untamed current. But as the importance of shipping on the Elbe drastically increased, the river underwent fundamental changes. With the advent of steamboats, the river was expanded so that it could permanently accommodate larger vessels. In 1844, the “Additionalakte” [additional law] was introduced as a cross-state agreement that initiated the systematic expansion of the river.

At the end of the 19th century, three waterworks were constructed. The “Saloppe” waterworks were built on the right side of the Elbe in the area around the bend in the river. Built in the 1870s in a French Renaissance style, “Saloppe” was Dresden’s first waterworks. In designing the building, a key factor was its ability to function as a lookout point.

Despite modifications to the river basin, the size and the topographical character of the Elbe meadows have remained relatively unaffected. In keeping with tradition, the meadows remain free of buildings. Certainly one reason for this is that retention space is needed because of frequent flooding. The meadows are therefore unsuitable as building land. However, it is also clear that planners were quick to recognize the scenic value of the undeveloped meadows in the developed urban surroundings and on occasion sought to protect the area with building laws (see chapter 2). For example, on 9 November 1900, a law was passed to protect the distinctive area of the Elbe floodplain near the Waldschlösschen. This area extends up to Bautzner Strasse and together with the neighbouring development makes the overall composition of the waterside edge of “Prussian Quarter” banks nearly symmetrical. The law stipulated that “the building ban imposed on the development of the Waldschlösschen meadow by the inheritance deed of 25 August and 21 December 1787 by virtue of sovereign sanction would apply indefinitely to the entire area”. It was uncertain whether this law alone would prevent the Waldschlösschen brewery, the owner of the land, from building on the meadowland. For this reason, the city bought up the entire meadow area by order of the city council in 1908. As a result, “the unique and marvellous city vista point and its surroundings were brought safely in the hands of the city for all time.“ (Laudel, Heidrun; Dresden, City Archives, City Council Files, W 66, Bl. 8)

However, in a departure from the city councillors’ decision of 17 September 1908, it was decided at the time the Waldschlösschen meadows were purchased that the land in question, though still to remain barred to development, may legitimately be used for particular purposes of benefit to the public. §4 of the purchase agreement includes the following: „It is placed on record here and accepted by both parties that the land purchased under this agreement is to be kept free from building development. This
Figure 3.12
Plan of the Elbe river banks, 1935

Source:
State Capital of Dresden
exclusion shall not apply to squares, roads and bridges, tram-stop shelters, other refuges and playgrounds, public conveniences, advertisement columns and other such installations provided for public use.” This resolution was approved unanimously. (Dresden City Council files relating to purchase of the Waldschlösschen meadows and possibility of purchase of the Waldschlösschen, W66, Blatt 41 (Sheet 41), 14 January 1909)

In the 1920s and 30s, city building officer Wolf left an indelible mark on the history of urban development of the Elbe river bend between Albert Bridge and Loschwitz Bridge. He was one of the first to recognize - and actually treat - the Dresden Elbe Valley as a “Collective Municipal Area” or “Total Work of Art” [“Gesamtkunstwerk”]. (See also chapter 2, section 2.1, p. 15)

During the 1930s, Wolf defined the topographical design of the Elbe Valley, which was to serve as a recreational area, in his plans for the banks of the Elbe and oversaw the project’s implementation. 1936 saw the completion of the “Königsufer,” a green area extending four kilometers along the Northern slope between the Marien Bridge and the mouth of the Prießnitz river. Wolf developed thematic gardens on the Königsufer, such as rose gardens and shrub gardens as well as stairways, walls, bridges and sculptures. He also had rambling trails built along the banks of the Elbe and a series of vista points such as the terraces at the Saloppe waterworks, the Waldschlösschen pavilion with adjoining terrace, and the panorama terraces at the Drachenschänke [Dragon Bar] and at Albert Bridge. The plan on the left, which dates from 1935, shows the essential elements of Wolf’s design for the „Königsufer“. Also included in this plan is the line for an Elbe crossing in the vicinity of the Waldschlösschen. Further details of the background to this bridge planning are provided in Chapter 5, section 5.1.

The Elbe meadows between the Albert and Loschwitz Bridges enjoy a unique location within the city of Dresden. For this reason, they have been used as a traditional venue for events and recreation for many years (e.g. the Vogelwiese during the Baroque period). It is also the main reason why so many popular destinations for inner-city and local outings evolved in the highly scenic locations in and around this area during the first half of the 19th century. Such places include the “Waldschlösschen Brewery” or “Antons an der Elbe“.

The planning measures implemented by city building officer Wolf certainly contributed to further establishing the meadows as an important recreational area close to the city. The flat banks of the Elbe in Johannstadt in particular with their expansive meadows developed into an urban recreational area. Many restaurants and recreational facilities as well as indoor and outdoor swimming pools were established here and thrived until the 1920s and 30s. To the east of Albert Bridge, the Johannstadt banks were at one time even home to a water aerodrome, which was built in 1926 (Dresden – Geschichte der Stadt [History of Dresden], page 209).
Figure 3.13
Festival hall for the first singing society festival in Dresden, held 22-25 July 1865

Source: Dresden, Die Geschichte der Stadt, Dresdner Geschichtsverein e.V. [History of Dresden, published by Dresden Historical Society].
The “Vogelwiese” meadow on the Johannstadt banks was regularly used as a fairground. Historical documents show that similar events took place on the right bank of the river. In 1865, for example, a singing society festival was held on the Elbe meadows in a hall erected especially for the occasion. Some 16,000 singers took part in the event. Following the February 1945 bombardments, large amounts of rubble were used to fill in the Johannstadt banks, including the land which was formerly the Vogelwiese. Nonetheless, the landscape of the Elbe meadows has to this day retained its fundamental scenic features and continues to play an important role as a local recreational area. The scenic features of the Elbe river bend have stimulated a diverse architectural heritage in the area. In terms of size and location, the expansive river and floodplain basin is also of outstanding quality. The topography of the area is also especially favourable.

3.4 View of the Elbe river bend between Albert Bridge and Loschwitz Bridge

It is apparent that during each phase of the city’s development throughout the 19th and 20th centuries, the Elbe river bend, with its expansive meadows, provided a unique open space within the city and played a key role as a local recreational area. The area is not and never has been a landscape that was gradually “taken over” by inhabitants for these purposes. Instead, the area was clearly cultivated and deliberately shaped over the years to provide a special scenic experience in the city centre. Some of its salient locations were even deliberately “showcased”. This is because topographical conditions make it possible for numerous visual relationships between the urban area and the Elbe Valley landscape to be appreciated. Over time, many lookout points evolved in this area, especially on the northern hillsides of the Elbe. Many of these lookout points form an integral part of the more exposed buildings. The significance of the Elbe is made apparent by the sheer quantity of river-facing terraces these buildings have. Many other lookout points were specially created as part of the planning measures for the Elbe river banks. These include the viewings mentioned above built by city building officer Wolf during the design of the “Königsufer.” Through the curvature of the Elbe river bend, these lookout points “showcase” specific panoramas. This applies to views of the city as well as those of the Elbe Valley landscape. From the tops of certain buildings, or elevations in the land, the viewer has a panoramic view of the entire landscape, which rather resembles an amphitheatre. Such lookout points include the dome of the Frauenkirche [Church of Our Lady], the top station of the suspension cable railway in Loschwitz and the Luisenhof restaurant.

Opportunities for scenic views play a less significant role in the southern region of the Elbe floodplains. However, the end points of the roads leading to the banks of the Elbe
Figure 3.14
Visual relationships between the Frauenkirche and the study area

Source: author’s illustration

Figure 3.15
Visual relationships in the study area

Source: author’s illustration
are of special importance for viewing the landscape. Examples include Arnoldstrasse, which ends at Thomas-Müntzer-Platz. This slightly elevated position also offers a good view into and over the Elbe Valley. Another unique example is the “Lanschaftsbalkon” [scenic balcony] on Käthe-Kollwitz-Ufer, which is an extension of Lothringer Weg. This vantage point showcases a view of the Elbe castles on the northern slopes of the Elbe, though it also offers views to the east and west.

The following is a list of the Elbe Valley vantage points on both sides of the river, which are of significance with respect to the visual relationships between the Old Town and the Elbe Valley landscape and require detailed investigation.
(See general map, pages 42-43)

**Northern bank**
1. Albert Bridge (Viewing terrace)
2. Viewing terrace in the rose gardens
3. Viewing terrace at the Drachenschänke restaurant
4. Start of Oberkiesweg (below Waldschlösschenstrasse)
5. Waldschlösschen pavilion
6. Terrace of the Waldschlösschen brewery
7. Viewing terrace at the Saloppe waterworks
8. Viewing terrace of the Elbe castles
9. Dinglinger estate (Dingling vineyard)
10. Ardenne research institute
11. Luisenhof restaurant (viewing tower)
12. Loschwitz Bridge
13. Suspension cable railway with top station in Loschwitz

**Southern bank**
14. Frauenkirche dome
15. Albert Bridge
16. Lanschaftsbalkon [scenic balcony] Lothringer Weg / Käthe-Kollwitz-Ufer
17. Former site of “Antons an der Elbe”
Figure 3.16  Lookout points in the area under investigation  Source: author’s illustration/aerial photo, Saxony Surveying Office
Another important aspect is the appearance of the landscape of the Elbe river bend from the perspective of a moving viewer. The landscape of the Elbe river bend between Loschwitz Bridge and Albert Bridge has special topographical qualities that provide continuously changing perspectives depending on the viewer’s position. Continuously changing visual relationships are also obtained of the landscape of the Elbe floodplains and the adjoining landmarks. This visual effect is primarily created by the distinctive bend in the river and the simultaneous widening of the floodplain. In this way, pedestrians or cyclist going along the cycling/walking paths on the banks of the river, and ramblers on the meadow paths are continuously presented with new spatial impressions. Similar impressions arise when travelling on a steamboat or driving along Käthe-Kollwitz-Ufer, especially in a westward direction. The viewer is offered “dynamic perspectives" with ever-changing spatial progressions that can be perceived at different speeds depending on the type and means of locomotion.

3.5 Conclusion
An exceptional standard of artistic urban development and architectural heritage can be clearly demonstrated in the urban development of the Elbe river bend region between Albert Bridge and Loschwitz Bridge. This is evidenced by the planned and staged interaction between the urban and the natural landscape. Since the Elbe floodplains remain undeveloped to this day, they can be perceived as an integrated landscape which together with the surrounding areas offers diverse scenic experiences right in the heart of the city.

The wide Elbe meadows in the area studied form an almost unobstructed floodplain area with only a smattering of trees. As a result, the meadows give a feeling of scenic expanse which is totally unique in a large city centre. The river bend configuration reinforces this impression. By intentionally keeping the Elbe meadows free of development, visual relationships from many points of elevation have also been retained as much as possible. Throughout history, appropriate legal and planning regulations for buildings were implemented to protect the meadows from development.

Since the beginning of the 19th century, a number of lookout points and popular destinations have been created to showcase the attractive landscape and the view of the Elbe river in the area studied. These locations offer an extraordinary view of the city skyline, the Frauenkirche (Dresden’s restored landmark) and the landscape of the Elbe valley. Other lookout points on the Elbe floodplains serve to set up visual relationships between the individual sections of the Elbe river bend. Most of these lookout points offer views of structural landmarks or prominent features of the landscape. These specially
created lookout points must be given special treatment in the field of view analysis. The landscape of the Elbe river bend between Albert Bridge and Loschwitz Bridge has unique scenic and topographical features. This study must therefore focus on the impact of the prospective „Waldschlösschen Bridge“ project on the scenic qualities of this section of the Elbe valley, and not just its visual effects on the Dresden city skyline. To complete this urban and topographical study, the next chapter will investigate the special role played by prominent vantage points in the past and the way this landscape has been perceived as conveyed by historical descriptions.
Figure 4.1
Gabriel Tola, “Neustadt und Altendresden von Osten” [New Town and Old Dresden from the East], Dresden ca. 1570

Source:
“Der Blick auf Dresden”, Deutscher Kunstverlag

Figure 4.2
Matthaeus Merian the Elder, “Prospect der Brücken zu Dresden” [View of the Dresden Bridges], In: “Topographia Superioris Saxoniae, Thüringiae, Misniae et Lusitiae”, Frankfurt/Main 1650

Source:
“Der Blick auf Dresden”, Deutscher Kunstverlag
4 Perception and depiction of the study area in different periods

The distinctive character of the Dresden Elbe Valley land- and cityscape, together with the exceptional vistas afforded by its topography, has proved particularly inspiring to those representational art forms that are concerned with city and landscape views. Artistic readings of this kind shed light on the cultural significance of geographical locations and the views they provide. They document an important aspect of the collective memory of Dresden’s land- and cityscape.

Views of the Elbe valley between Albert Bridge and Loschwitz Bridge represent a dominant theme in the history of Dresden art. Over the centuries, numerous artists have been inspired by the area’s harmonious interplay between architecture and landscape, the expanse of the Elbe floodplains and the changing perspectives offered by the curving river. This unique topography has resulted in a wealth of visual relationships between the city area and the Elbe landscape which have, in turn, been recorded in works of art.

The catalogue for “Der Blick auf Dresden” [The View over Dresden], an exhibition currently being held at the Staatliche Kunstsammlungen Dresden to accompany the reopening of the Frauenkirche, has provided an important source for the depictions of historic Dresden included in this chapter.

4.1 Artistic representation
The history of artworks that depict Dresden’s city and landscape – especially the area to the east of the Altstadt, where city and nature are closely intertwined – can be traced back to the 16th century, beginning with a work by Gabriel Tola. This unusually wide ink drawing (25 cm x 196.5 cm) depicts the silhouette of the city of Dresden nestled in the Elbe valley. The backdrop is a gently undulating group of hills; the foreground shows a Renaissance park. The artist’s view is from the southern bank of the Elbe. Many of the subsequent depictions of Dresden were to adopt this perspective.

Figure 4.3
Pieter Hendricksz, "Schut. Dresden", coloured etching, ca. 1640

Source: “Der Blick auf Dresden”, Deutscher Kunstverlag

Figure 4.4
Johann Alexander Thiele, “Ansicht von Dresden mit der Augustusbrücke” [View of Dresden with Augustus Bridge], Dresden 1746

Source: “Der Blick auf Dresden”, Deutscher Kunstverlag

Figure 4.5
Bernardo Bellotto (Canaletto), “Dresden vom rechten Elbufer oberhalb der Augustusbrücke” [Dresden from the Right Bank of the Elbe, above Augustus Bridge], Dresden 1747

Source: “Der Blick auf Dresden”, Deutscher Kunstverlag

Figure 4.6
Bernardo Bellotto (Canaletto), “Dresden vom rechten Elbufer unterhalb der Augustusbrücke” [Dresden from the Right Bank of the Elbe, underneath Augustus Bridge], Dresden 1748

Source: “Der Blick auf Dresden”, Deutscher Kunstverlag
in Meißen” by Eberhard Kieser and Daniel Meisner (“Sciagraphia cosmica”, Nuremberg 1678).

Matthaeus Merian the Elder similarly referred to Tola’s drawing in his single print “Dresden” (“Topographia Superioris Saxoniae, M isniae et Lusatiae”, Frankfurt/M ain 1650). Compared to Tola’s perspective, however, Merian shifted the view of the city to the right. The work conveys a new, equally realistic view of Dresden by omitting a Renaissance park but giving better depth of perspective to the landscape.

Like Tola and his successors, Baroque artists also depicted the city from an eastern view and integrated within the surrounding landscape, as is demonstrated by Peter Hendricksz’s coloured etching. Like Merian, Hendricksz diverged from Tola’s perspective and focused more closely on the river’s edge, adopting a slightly elevated view. This emphasises the landscape in the foreground of the painting, with the river curving towards the more distant outline of the city. In contrast to Tola’s intentionally realistic representation, Merian and Hendricksz shifted the perspective in an attempt to “compose” a relationship between the silhouette of the city and the landscape. In Hendricksz’s painting, this is further emphasised by the group of persons depicted in the foreground.

In the 18th-century Dresden paintings of Johann Alexander Thiele, nature and landscape are central themes. Thiele was one of Germany’s most important landscape and perspective painters. His paintings are characterised by a very accurate representation of nature. Both in their tradition and their composition, these works remain true to the 17th-century art they were modelled on. Thiele worked in Dresden between 1738 and 1752 (see “Der Blick nach Dresden, p. 72). The composition of his exemplary painting “Ansicht von Dresden” (1746) focuses on the breadth and openness of the Elbe river bank. The point of view is from the southern bank west of the Altstadt, looking towards the east. The centre of the painting depicts the wide Elbe river, and the foothills of the Sächsische Schweiz mountain range can be made out in the background. The old town on the right edge of the painting and the new town on the left are no more than framing elements for the portrayed landscape. Fittingly, the sky covers more than half of the canvas and serves to emphasise the wide perspective.

In contrast, Canaletto’s paintings show several perspectives of Dresden’s Altstadt, in which the outskirts and surrounding environs play a minor role. The most famous of these are the views of the old town from below and above Augustus Bridge on the right bank of the river (level with the Japanese Palace). Evidently, these well-known paintings are of no import to the visual impact study, as they solely depict the inner city of Dresden.

The catchphrase of “Canaletto kaputt”, used by some feuilleton journalists and writers
Figure 4.7
Johann Alexander Thiele, “Prospect von Dresden vom Wege nach Bautzen aufgenommen” [View of Dresden as seen on the Road to Bautzen], Dresden, before 1740 (left)

Figure 4.8
Anonymous, “Vue de Dresden prise de la route de Bautzen” [View of Dresden as seen on the Road to Bautzen], Germany, ca. 1810 (right)

Source: “Der Blick auf Dresden”, Deutscher Kunstverlag

Figure 4.9
Karl Friedrich Schinkel, “Fernblick auf Dresden” [Distant View of Dresden], Germany, after 1803 (right)

Source: “Der Blick auf Dresden”, Deutscher Kunstverlag

Figure 4.10
Franz Wilhelm Leuteritz, “Blick auf die Elbschlösser bei Dresden” [View of the Elbe Castles near Dresden], Dresden 1868

Source: “Der Blick auf Dresden”, Deutscher Kunstverlag
for the national press when making often rather simplistic reference to the proposed construction of the Waldschlösschen Bridge, should therefore only be considered as metaphorical.

In the 18th century, artists explored a new view of the city – from Bautzner Strasse on the outskirts of town. Travellers from the east came to Dresden via this route. At several points, the forest cleared to reveal a broad panoramic view of the city. Over several decades, numerous pictures were produced depicting the Elbe valley as seen from Bautzner Strasse.

In his painting “Prospect von Dresden vom Wege nach Bautzen aufgenommen” (Dresden, before 1740), Alexander Thiele presents an especially expansive view of the river and city, with gently sloping meadows and isolated low trees. From this perspective the outline of the inner city seems to stretch out across the horizon, and the bends in the Elbe makes the river appear to be very wide. While Thiele represents the surrounding vegetation very accurately; he also uses it compositionally to embed the Dresden city outline in the surrounding landscape.

Approximately 70 years later, around 1810, an anonymous painter depicted the city of Dresden from a similar perspective. The composition of this painting differs to Thiele’s in that it integrates not only “natural” elements such as the vegetation into the structure of the painting but also “unnatural” elements such as the twists and turns of Bautzner Strasse and a series of distinctive, individual buildings across the terrain.

A watercolour by Schinkel, painted after 1803, shows the city more distantly from the northeast. The two bends in the river, painted in light colours, are at the centre of the composition. The city outline rising above the wide, light river bend is located in the left half of this circular painting – at first glance, it is barely discernible. The colours used and the composition de-emphasise the city to a point where it becomes just one of the valley’s many features. In Schinkel’s depiction, the city fuses almost completely with the surrounding landscape.

Franz Wilhelm Leuteritz’s painting shows Dresden from “Dinglingers Weinberg” [Dinglinger’s Vineyard] in the Loschwitz Heights. On the right, the Elbe castles can be seen in the painting’s foreground. The small, distant city outline is shown above the broad, low meadow in the Elbe river bend. From the mid-19th century, the first city panoramas were painted from the perspective of the Waldschlösschen. This marked the beginning of the renowned Waldschlösschen view.
Figure 4.11
Robert Geissler, “Dresden vom Waldschlösschen” [Dresden as seen from the Waldschlösschen], Dresden, mid-19th-century, lithograph
Source: “Der Blick auf Dresden”, Deutscher Kunstverlag

Figure 4.12
G. Täubert/H. Willard, “Blick auf Dresden vom Waldschlösschen” [View of Dresden from the Waldschlösschen] (left)

Figure 4.13
Photograph: “Aussicht vom Waldschlösschen” [View from the Waldschlösschen], 1938
Source: Fritz Löffler, “Das Alte Dresden”, E.A. Seemann Verlag Leipzig
Robert Geissler’s lithograph, produced in the mid-19th century, depicts the wide panorama of the Elbe valley. The painter used a horizontal format (17.5 cm x 52.2 cm) to present the full breadth of the valley complete with river and floodplains, as seen from the Waldschlösschen. The lithograph also includes a number of landmark buildings that add to the character of the landscape. The city outline on the horizon, complete with the distinctive cupola of the Frauenkirche, is the backdrop to the wide and shimmering river bend.

At the same time and from the same vantage point, Gustav Täubert and Hans A. Willard depicted the city of Dresden as a metropolis undergoing rapid industrialisation - a development which will lead to man’s domination over nature. A group of people can be seen in the foreground, with landing stages, streets and smoking chimneys on factories and steamboats in the background.

As part of his landscape designs for the banks of the Elbe, city building officer Paul Wolf commissioned the creation of a pavilion (the “Waldschlösschenpavillon”) with adjoining viewing platform above the northern riverbank. This pre-war photograph shows the city outline on the horizon behind an expansive Elbe meadow with single fruit trees.

4.2 Images for tourism

Tourism in the Elbe valley became a significant contributor to Dresden’s economy as early as the 19th century. The steam-powered tour boats introduced at the time for recreational explorations of the valley are still running today. As a result, it became fashionable to compile sets of the different views of Dresden, usually on collector cards (the precursors to postcards) around 1850. These cards often showed the city nestled in the Elbe valley as the central image, with smaller images of single landmark buildings or well-known “inns” on the periphery.

Surprisingly, the Elbe valley area between Albert Bridge and Loschwitz Bridge is largely neglected in the brochures and postcards currently used in tourism promotions of Dresden. The so-called “Canaletto view”, on the other hand, remains an ever-popular postcard subject. Some postcards show the curving Elbe by Dresden-Johannstadt from the Loschwitz cableway hill station (P1, P2), or an aerial view of the Altstadt looking towards the west (P3). Photographs of the Dresden Elbe Valley and the Elbe river bend are also used to promote Dresden’s status as a UNESCO World Heritage Site (e.g., in the promotional brochure “Dresden Elbtal ist Welterbe!” [Dresden Elbe Valley is a World Heritage Site!] and on the Internet at http://www.dresden.de).
Figure 4.14
Source: “Der Blick auf Dresden”, Deutscher Kunstverlag

Figure 4.15
Source: “Der Blick auf Dresden”, Deutscher Kunstverlag

Figure 4.16
Postcards: P1, P2, P3
Source: Kunstverlag Brück&Sohn
Source: DVB AG, M. Fröhlich
Source: Rahmel-Verlag
4.3 Conclusion

Evidently, artists from different periods viewed the city of Dresden and the landscape of the Elbe Valley in different ways, focussing on different aspects in their depictions. Artistic views of the city from the east have predominantly focused on the Elbe river bends and floodplains. Comparing the city views of Hendricksz (17th century), Thiele (18th century) and Schinkel (early 19th century), the perspective gradually shifts towards the east. The bend in the Elbe valley between Albert Bridge and Loschwitz Bridge was increasingly viewed, depicted and used in the composition as a cohesive stretch of landscape in front of the city of Dresden.

Over the 19th century, a number of landmarks and vantage points emerged around the Elbe river bend which, still today, afford impressive views between Albert Bridge and Loschwitz Bridge. Franz Wilhelm Leuteritz's 1868 painting, for example, already shows the city from “Dinglingers Weinberg” and features the Elbe castles in the foreground. Geissler's mid-19th-century “Waldschlösschen view” offers not only a panoramic perspective of the Dresden Altstadt but also includes landmark buildings and outstanding features that have remained highly characteristic of the Elbe valley by Johannstadt to this day. The painting clearly shows the “Antons an der Elbe” building on the left side of the Elbe, as well as the two villas that frame the opening Elbe meadows level with the “Preußisches Viertel” [Prussian Quarter]. The compositional interplay between city outline, architectural landmarks, elevated vantage points and other dominant features that still define the Elbe valley between Albert Bridge and Loschwitz Bridge today can clearly be seen in this 19th-century painting.

The 1930s photograph taken from the Waldschlösschen pavilion demonstrates how the public perception of this stretch of valley - gradually reinforced over generations - was “completed” over the intervening years. A prime example of this is the creation of the public “Königsufer” area under city building officer Paul Wolf, featuring the Waldschlösschen pavilion as the viewing point of choice.

It appears that as the Elbe valley landscape, particularly the northern hillsides, was developed and “cultivated” as a recreational and tourist area (as well as a sought-after residential zone), the significance of this landscape in the depicted city views and the significance of its vantage points to the visual perception of the city grew correspondingly.

In contrast, the depiction of the cultural landscape of the Dresden Elbe Valley seems to play a comparatively minor role in Dresden’s current city promotion materials. Presumably this is because resources have been focused very strongly on reconstructing the city’s historic old town over the last years. The recently completed reconstruction of the Frauenkirche in particular has attracted a large amount of attention, and the
public focus is primarily being directed towards a more sensitive awareness of the inner city. However, this should not distract from the continued importance of the Elbe valley between Albert Bridge and Loschwitz Bridge to the “view of Dresden”, as the valley’s main picturesque qualities have been preserved with very little modern-day interference. The uninterrupted visual flow of the river landscape with the Elbe meadows is central to this role - it “frames” the view of the city.
The planned “Verkehrszug Waldschlösschenbrücke“ in the context of the Dresden Elbe Valley’s cultural landscape

Besides the characteristics of the cultural landscape, the design and structural features of the bridge itself play a role in evaluating the field-of-view compatibility of the prospective “Verkehrszug Waldschlösschenbrücke” with the UNESCO World Heritage Site “Dresden Elbe Valley“.

For this reason, and also to enable a better understanding of the complex building project, this chapter will describe the prospective thoroughfare in detail, including detailed descriptions of construction, key design features, traffic handling details, and its integration into the surrounding traffic network.

The chapter begins by briefly outlining the history of plans for an Elbe bridge in the Waldschlösschen area. For many years, the idea of building an additional Elbe bridge has continually reappeared in Dresden’s urban planning history. This puts current plans for constructing a bridge into a historical perspective. Even the plans for the “Verkehrszug Waldschlösschenbrücke“ project go back ten years. For this reason, this chapter will also illustrate the most important stages in the development of these plans.

The chapter closes with a short overview of the existing bridges in the UNESCO World Heritage Site “Dresden Elbe Valley“. The distinctive bridges of the Dresden Elbe Valley are one of the defining features of the region’s cultural landscape. The brief overview of the history of the bridges describes the type, design and scale of the existing Elbe bridges in order to provide benchmarks for the planned “Verkehrszug Waldschlösschenbrücke“. As a result, it should be possible to determine which features of the Dresden Elbe bridges have characterised and shaped this urban area and landscape in the past. In addition, it should also be possible to draw conclusions about the extent to which typological similarities or differences exist between the prospective “Verkehrszug Waldschlösschenbrücke“ and other bridges in the Dresden Elbe Valley.
Figure 5.1
General building plan for the city from 1862 (plan reconstructed by Dr. Werner Pampel, Dresden, 1872 master plan)

Source: State Capital of Dresden

Figure 5.2
1891 city map

Source: State Capital of Dresden

Figure 5.3
1898 city map

Source: State Capital of Dresden
5.1 Historical plans for Elbe bridges at the Waldschlösschen site

Ever since Germany was first unified in 1871, there have been intentions and concrete plans to build an Elbe bridge at Waldschlösschen. A crossing point at the Waldschlösschen Bridge has repeatedly been envisaged in a variety of forms at different times. However, none of these plans were ever realised. The following overview makes no claim to completeness as this is not the objective of this report. Nonetheless, it provides a very brief outline of how the project evolved as part of Dresden’s urban planning considerations.

The following overview of the historical development of plans for Elbe bridges at Waldschlösschen is based on a written compendium entitled “Planungshistorie - bisherige Planungen und Untersuchungen am Standort Waldschlösschen”, [Planning history: plans and analyses conducted at the Waldschlösschen site]. This work was provided by the Dresden City Council. (Source: “Planungshistorie - bisherige Planungen und Untersuchungen am Standort Waldschlösschen”, Dresden Urban Planning Office, 22.02.06)

Planning history: plans and studies relating to the Waldschlösschen site to date

**Plan 1862**
“The general building plan for Dresden in 1862 envisages a circular city structure and the establishment of a building limit line. A ring road forms the boundary of the inner zone which encompasses the city centre. This road was intended to start at the Marien Bridge, encircle the old town and be expanded to meet a third, new Elbe bridge (Albert Bridge) which was still to be constructed. The plans show an outer ring road, which circles the city centre at a greater distance than the first ring road. As a result, the outer road would also define the boundary between the zone for the more open villa area and the undeveloped landscape.”

**Plan 1891**
“The Albert (1875/77) and Carola (1892/95) bridges were built within the first ring road in the years leading up to 1900. The general building plans from 1862 did not contain specific plans for Elbe bridges outside the inner ring road, nor were such plans required as these areas were still sparsely populated on the Altstadt side of town. Outside the city of Dresden, the Loschwitz Bridge (“The Blue Wonder”) was built in 1891/93 between the suburban communities of Loschwitz and Blasewitz.”

**Plan 1898**
“Specific plans for additional Elbe bridges did not appear until the end of the 19th century. For example, there were discussions about replacing existing ferries with bridges at the mouth of the Priessnitz and at Waldschlösschen. As shown by the existing or planned street grid on the left and right sides of the Elbe from around 1900, a number of street axes on the Altstadt and Neustadt side of the city were already
Figure 5.4
Development plan, North Johannstadt, 1900
Source: State Capital of Dresden

Figure 5.5
1905 city map
Source: State Capital of Dresden

Figure 5.6
Main traffic plan from 1937
Source: State Capital of Dresden
in alignment. As a result, the groundwork had already been laid for additional Elbe bridges."

**Plan 1900**

“Development plan N. C. 4e, which was approved by the ministry in 1889, established plans for the access ramp for the fifth Elbe bridge between the Diakonissenanstalt hospital and the Linke’schem Bad baths. As a result, a decision was made to move the high bank road planned for the left side of the Elbe toward the river in 1897. In addition, a semi-circular square would be built to accommodate the bridge head on the Altstadt side of the river. The North Johannstadt development plan of 1900 established plans for semi-circular squares near today’s Thomas-M üntzer-Platz and the entrance to Fetscherstrasse. Each of these could potentially provide a connection to an Elbe bridge.”

**Plan 1905**

“According to the 1905 city map, the Johannstadt bank (now Käthe-Kollwitz-Ufer) is planned to provide a thoroughfare (flood-safe high bank road) between Johannstadt and Blasewitz with extensions resembling public squares at Feldherrenplatz (now Thomas-M üntzer-Platz) and at the continuation of Fürstenstrasse (now Fetscherstrasse). On the Neustadt side, the map also shows plans for the eastward extension of the Königsufer up to the mouth of the Priessnitz.”

“In 1900 and 1911, the Johannstadt district association requested the construction of a bridge at Waldschlösschen to serve the growing population of East Dresden (114,000 people lived in Johannstadt, Striesen and Gruna) and provide faster access to the heath and Albert Park. However, the city council rejected the requests, citing financial reasons.”

**Plan 1934**

*see fig. 3.12*

“Not until the 1930s were concrete plans developed for another bridge between Albert Bridge and Loschwitz Bridge. In 1934, city building officer Paul Wolf created plans for styling the banks of the Elbe. His plans include not only extensive designs for the free space on both river banks, they also envisage a bridge at Waldschlösschen. In addition, the first subsoil analyses and preliminary structural analyses were conducted for this site from 1926 to 1935.”

**Plan 1937**

“In Dresden’s main urban traffic plan of 1937, the bridge at Waldschlösschen is seen in connection with the linking of the city’s main transport network and the autobahn.”
Figure 5.7
General traffic plan from 1967: system of planned main arteries

Source: Strassen- und Verkehrsgeschichte deutscher Städte nach 1945 [Road and Traffic History of German Cities after 1945], issue 16, Kirschbaumverlag Bonn

Figure 5.8
1978/79 plans for an eight-lane bridge

Source: State Capital of Dresden
“Between 1960 and 1970, new traffic planning studies were conducted for the Waldschlösschen Bridge site. A six-lane bridge with multilevel bridge heads was included in the list of projects to be implemented as part of Dresden’s 1967 general traffic plan. In 1976, the road project was once again included in Dresden’s general traffic plan.“

“In 1978/79, an eight-lane bridge with oversized junctions was considered necessary and planned. The bridge was planned in connection with large new developments planned for the northern and eastern sections of the city.“

“As the condition of Loschwitz Bridge became a cause for serious concern, a solution to relieve the bridge was sought. As a result, further studies on the bridge site were conducted 1984 and 1986. The solutions developed envisaged a four or six-lane prestressed concrete bridge and bridge heads with partially multilevel intersections at the Waldschlösschen site.“

“In 1988, the East German Transportation Ministry decided to build a four-lane bridge with multilevel bridge heads at the Waldschlösschen site as part of the outer ring of the city. Construction of the bridge was planned for to take place after 1990.“

“In 1988, a bridge design competition was announced. Following the competition, a design submitted by the Dresden Autobahn Combine, which envisaged a four-lane cable-stayed bridge with pylons on the left bank and multilevel bridge heads, was selected for further development. However, the design and its plans were considered outdated by 1990 and therefore abandoned.“

Ideas and plans for building a bridge at the Waldschlösschen site have clearly existed for a long time. Although such plans have varied in importance, type and magnitude, they have continually reappeared in Dresden’s urban planning history. Nonetheless, it cannot be claimed that Waldschlösschen Bridge is simply an historical inevitability based on the list of plans and the brief descriptions presented here.

Similarly, it cannot be argued that Waldschlösschen Bridge is hard-wired, almost like a genetic code, into Dresden’s city structure simply because potential bridge heads were created on the southern riverbank as a precautionary urban planning measure, and because the street axes on both sides of the river are in alignment with each other. This argument is not convincing because the urban structure of this part of the city already began changing long ago, simply due to the natural landscape. The original concentric structure of the city centre took on more of a ribbon-like shape and naturally followed the path of the Elbe. Even if traffic planning considerations dictate an additional Elbe
Figure 5.9
Pylon bridge, 1989 design for competition, First prize, Autobahn Construction Combine, Dresden

Source:
State Capital of Dresden

Figure 5.10
Pylon bridge, 1989 design for competition, First prize, Autobahn Construction Combine, Dresden

Source:
State Capital of Dresden
crossing somewhere in the Dresden metropolitan area, it does not necessarily follow
that this would have to be at the Waldschlösschen site, constituting a further “radial
link”, as from a morphological point of view it cannot be argued that this is necessitated
by the city structure as it is at present.

An overall examination of the plans shows that they were always products of their time.
This becomes clear when each of the development plans are viewed in their historical
context:

Like all other plans of that time, the general development plan created in 1862 by urban
planning commissioner Heinrich Hermann von Bothen is a building zone plan and not a
traffic plan. His goal was to regulate urban growth. The circular structure of his building
zone plan was intended to prevent the city from growing “chaotically” together with
surrounding settlements along radial paths. The only new bridge in the general develop-
ment plan was the Albert Bridge, which was begun in 1875 (Source: Laudel, Heidrun,
page 1). The bridge was planned as a part of the “Innerer Environweg” [“Inner
Ringroad”], which corresponds to the course of today’s so called “26iger Ring” [“26th
Ring”]. Further, the plan shows an optional ring further outside of the city center, the
so called “Äusserer Environweg” [“Outer Ringroad”].

The plans of 1891, 1898, 1900, and 1905 to 1908 document the development of the
high bank road (now Käthe-Kollwitz-Ufer), which already connects with Blasewitz in
the east according to the 1908 plan. However, the plan from 1900 also shows the end
points of the present Arnoldstrasse as well as Fetscherstrasse as optional bridge heads.
The 1900 plan envisages the bridge between Thomas-Müntzer-Platz and the M outh of
the Priessnitz, however.

Not until the 1930s under the authority of city building officer Wolf was real considera-
tion given to building a bridge at the Waldschlösschen site. His plans are a response to
the newly built German autobahn and attempt to link the Dresden road network to this
new motorway. However, further steps toward implementing the bridge project were
not yet taken. (Laudel, Heidrun, page 2).

The general traffic plan of 1967 envisages an outer city ring that would function as
a highly efficient thoroughfare. It would feature three lanes in each direction and use
multilevel junctions for the most part. Only 50% of this outer ring would join up with
existing roads, which would need to be significantly widened. The rest of the road
would have been located in closed building zones such as the Leipzig suburbs [Leipziger
Vorstadt], the outlying parts of the Neustadt or Striesen, and would have necessitated
large-scale demolitions. (Source: Strassen- und Verkehrsgeschichte deutscher Städte
Figure 5.11
Overview plan of Dresden Elbe bridges, bridge locations

Source: Documentation from the design competition for the new Waldschlösschen Bridge; (DRNBW) 1998
nach 1945 [Road and Traffic History of German Cities after 1945], pages 35, 36, and 37). Plans from 1978 / 79 (eight-lane bridge with multilevel junctions) and 1989 (pylon bridge) are extensively based on the 1967 designs.

Insofar as this examination of past plans offers any arguments at all for the evaluation of the prospective “Verkehrszug Waldschlösschenbrücke“ in terms of urban environment and structure, one could claim that the area between Thomas-Müntzer-Platz and the mouth of the Priessnitz would be the most favourable location for a bridge based on the logic of the urban structure of the city centre. However, this location would also have to be thoroughly investigated in terms of urban structure (see statements made by Prof. Glaser at the Elbe Bridges Workshop on 28 and 29 May 1996). This is what the plans demonstrate, it is suggested in the concentric development of the city structure to date, and it also follows the rhythm of the city bridges in the Dresden inner city.

Historically, the Waldschlösschen site did not take on importance as a possible site for an Elbe crossing until inter-regional roadways were incorporated into the area around 70 years ago, even if other structural developments, such as the relocation of industrial zones away from the northern city centre area, may likewise have had some earlier bearing on bridge planning with regard to the Waldschlösschen site.

5.2 The development of plans for the “Verkehrszug Waldschlösschenbrücke“

After the fall of the Berlin wall in 1989, steps were again taken towards building a new bridge. The Generalverkehrsplan (Overall Traffic Plan, Third Draft, 1990), the alternative plan put forward by the “Group of 20” (January 1991), the plan contained in the Verkehrskonzept (Traffic Concept) of 1992, and the decision of 1994 all continue to envisage the Waldschlösschen site as the location for the additional Elbe crossing.

On 28 and 29 May 1996, the Elbe Bridges Workshop was held. For this, in the first instance, five alternative locations were examined: two sites in the west (new bridges at Erfurter Strasse/Ostragehege and the third Marien Bridge) and three in East Dresden (Thomas-Müntzer-Platz/Forststrasse, Waldschlösschen bridge and the new Niederpojritz/Laubegast bridge in combination with one of the above-mentioned bridges in East Dresden). (Source: PFS 2003, page 20). The current design for the prospective thoroughfare is based on statements made by Dr. Glaser, State Curator of Saxony, at the workshop. According to Dr. Glaser, among the many options for an additional Elbe bridge, the Waldschlösschen Bridge would be the “least harmful”. At the same time, Dr. Glaser advised “keeping the bridge low,” or “undertaking a comparative study for an Elbe tunnel.” Dr. Glaser’s recommendation to keep the highest point of the bridge below the Elbe slopes where the land meets the high banks of the Neustadt so as to avoid spoiling the landscape served as the basis for the further design of the thorough-
Figure 5.12
Graphic depicting the original planned bridge cross-section

Source:
DRNBW 1998
fare, in particular its gradient. (Source: Statement by Dr. Glaser during the “Elbe Bridges Workshop,” pages 9 and 10, 28-29 May 1996).

Consequently, the “International Design Competition for a New Elbe Bridge at Waldschlösschen“, which followed in the same year, took the route pursued to this day as its basis, namely an Elbe Valley bridge with a subsequent tunnel through the northern Elbe hillside. Other key traffic engineering guidelines required that the two bridge heads feature multilevel intersections. A total width of 26.50 metres for the cross-section of the bridge was specified in the competition guidelines. It was stated that the bridge should have two lanes measuring 4.75 meters in width as well as a public transport area to be accessible if required and including an integrated tram line. In addition, it was stated that the bridge should also feature a pedestrian and cycle path, each 3.5 metres wide.

The winners of the design competition were the Kolb/Ripke team of architects in Berlin, Thomas Kolb, Henry Ripke; Eisenloeffel/Sattler Engineers in Berlin; Daniel Sprenger, Landscape Architect; Henning Jesse, CAD Design Office, Berlin. The winners were subsequently commissioned to undertake further planning.

Traffic-related planning guidelines changed during the course of planning stage. Instead of reserving the middle of the bridge for trams, plans were altered to include additional lanes for private transportation in both directions. As a result, there would be two lanes running in each direction, that is, a total of four lanes, each 3.25 meters wide. The original plans for a tram line were replaced by a bus line. In addition, several types of multilevel access to the northern bridge head were examined. The competition specifications originally required a multilevel intersection at the Radeberger Strasse/Staufenberger Allee junction but this requirement was dropped. As an alternative solution, the option of a largely multilevel junction at Bautzner Strasse was pursued further (see building specifications, section 4.2).

On 18/02/2003, the city of Dresden submitted a request for approval of the plans. Approval was granted on 25/02/2004. This constitutes building permission. On 07/09/2004, the city council voted to block the funds for the project, but this move was vetoed by the mayor on 23/09/2004. In a local referendum held on 27 February 2005, 34.4% of those eligible to vote cast a “yes“ ballot to the Waldschlösschen Bridge. (Source: Dresdener Amtsblatt [Dresden Official Journal], 03/03/2005) This means that approx. 68% of the citizens who took part in the referendum voted in favour of the bridge (51% voter turnout). Bidding for the project began in August 2005 and is now completed.
Figure 5.13
Incorporation of the “Verkehrszug Waldschlösschenbrücke” into the local traffic network

Source: author’s illustration
5.3 Building specifications for the “Verkehrszug Waldschlösschenbrücke”
The following building specifications are taken from project bidding documents for the Verkehrszug Waldschlösschenbrücke, planning section 1, B025000- Waldschlösschen Bridge; 30/08/2005; Dresden Civil Engineering Office; ground plan, M 1: 500; (hereafter referred to as AVW 2005), as well as plan approval documents for the new Verkehrszug Waldschlösschenbrücke; application submitted by the State Capital of Dresden on 18/02/2003 (hereafter referred to as PFS 2003).

Topography
The planned location of Waldschlösschen Bridge is 2.5 kilometres east of the city centre at the 52.68 km mark in the river. At this point, the Elbe is ca. 127 metres wide. The entire landform of the Elbe (Elbe + Elbe floodplains) is approximately 800 metres wide at the site of the planned bridge. The southern land area up to the Johannstadt hospital reaches an elevation of only 4 metres, whereas the northern area up to Bautzner Strasse starts at 17 metres and rises to approximately 26 metres above the river at Radeberger Strasse. (Sources: documentation from the design competition for the new Waldschlösschen Bridge [DRNBW]; PFS 2003).

The Elbe meadows, floodplains and the river itself are part of the “Dresdener Elbwiesen und -altarme” (Dresden Meadows and Bayous) nature reserve. The north-eastern part of the project area affects the “Dresdener Heide” (Dresden Heath) nature reserve. The “Glatthaferwiese am Elbufer Johannstadt“ (Tall Oat Grass Meadow on the Johannstadt Elbe river bank), a 4.2-hectare nature reserve, is located entirely within the project area. The project area also contains the “Sängereiche“ oak tree, a listed natural monument (Source: PFS 2003, page 53).

Due to the complex topography of the area, the entire planned thoroughfare is divided into two distinct structural sections. The first is the bridge structure, which includes the bridge heads on the southern and northern sides of the Elbe valley. They integrate the bridge into the surrounding road network. The second area is the tunnel under the “Prussian Quarter“ which connects to the northern bridge head.

Bridge heads
The first section of the “Verkehrszug Waldschlösschenbrücke“, the overground part of the bridge, is 636 metres long in total. The planned thoroughfare also features bridge heads on the southern and northern sides. From a structural point of view, these bridge heads function as abutments. However, they also allow for “multilevel” access to surrounding roads. The southern end of the bridge meets Fetscherstrasse and Käthe-Kollwitz-Ufer. To allow for multilevel access to the bridge, Käthe-Kollwitz-Uferstrasse would cross under the bridge following a new route north of the existing one. In addition, the
Figure 5.14
Longitudinal section and ground plans for the planned bridge structure

Source: State Capital of Dresden; project bidding documents from 30/08/2005
The bridge structure

The prospective “Verkehrszug Waldschlösschenbrücke” features different structural sections. When viewed longitudinally from north to south, it consists of five essential structural sections: the southern bridge head, southern shore section (continuous girder bridge with V supports), Elbe bridge (steel arched trough bridge), northern shore section (continuous girder bridge with V supports), the northern bridge head, including the “Prussian Quarter” tunnel, and the tunnels that link the thoroughfare to Bautzner Strasse.

The ground plan or profile of the thoroughfare shows various differences in width. These are necessitated by the different structural sections or traffic-related factors. The standard width of the bridge structure (shore sections) is 28.6 metres in total. At the southern bridge head (Käthe-Kollwitz-Ufer), the total width of the thoroughfare, including optional stairways on both sides, is approximately 30 metres. The bridge becomes slightly wider in the middle due to the position of the arched beams between the foot/cycle path and the road. At its northern shore section, the bridge returns to its standard width of 28.6 metres. At its northern head the bridge once again widens to 50 approximately 50 metres (roads, turnoffs, bus stop, stairways). The tunnel section of the thoroughfare joins up with this section of the bridge in a multilevel junction with Stauffenbergallee.
Figure 5.15
Western view of the Elbe Bridge between 1550 and 1670

Source: DRNBW 1998
The bottom chords below the bridge floor are steel hollow box girders. Their vertical forces are balanced by the V supports (shore sections) or the hanging girders (Elbe section). Lampposts of approximately 9 metres in height are to be placed at various points on the bridge. The planning documents make no mention as yet of the traffic signs required for the thoroughfare. (Source: AVW 2005).

5.4 Bridges in the Dresden Elbe Valley

Dresden’s urban development always has been closely linked with the flow of the river Elbe. Dresden developed from the very beginning as a “bridge city” between the present Altstadt Dresden on the left side of the Elbe and the former fishing village Altendresden, now Neustadt, on the right side of the Elbe. The oldest of the existing present links in the Dresden Elbe Valley that connects these two cores is today’s Augustus Bridge. From 1850 to 1936 nine more Elbe bridges were built. These bridges are closely linked with the rapid pace of urban growth during this period. Six of these nine bridges are located within the boundaries of the UNESCO World Heritage Site “Dresden-Elbe Valley.”

The following overview describes all Dresden Elbe bridges, including those not located within the UNESCO World Heritage site. This will provide an overview of the history of bridge construction in the Dresden Elbe Valley. The source for this overview and the appended illustrations is the documentation for the design competition “Neue Brücke am Waldschlößchen” (DRNBW) [New Bridge at the Waldschlösschen Site].

**Bridges within the UNESCO World Heritage Site “Dresden Elbe Valley”**

**The Old Augustus Bridge**

Information varies regarding the construction of this bridge. The year of its founding is often given as 1222. At that time, 25 stone pylons and a wooden construction were joined together to create the first Elbe bridge. The bridge connected the old town and new town sides of the Elbe. Data on the length of the first Elbe bridge range from 525 to 660 metres. Over the course of time, this first Elbe bridge underwent many structural changes, the most significant of which was the replacement of the wood construction with stone arches. (see figure: Westward and Eastward View of the Elbe Bridge 1550 – 1670).

Between 1727 and 1731 Daniel Pöppelmann was commissioned by August the Strong to reconfigure and widen the existing bridge. The bridge was modified and modelled on the Rialto Bridge in Venice and the Charles Bridge in Prague. Its gradient was raised by lifting up the bridge’s mid-section, making the bridge more aesthetically attractive. The
Figure 5.16
Bernardo Bellotto, approach to Augustus Bridge, Elbe landscape in the background with the Lößnitz, Dresden im 18. Jahrhundert [Dresden in the 18th century]
Source: Bernardo Bellotto, Dresden im 18. Jahrhundert, Verlag Weidlich Würzburg

Figure 5.17
The New Augustus Bridge
Source: DRNBW 1998
bridge pylons were enlarged by expanding the bridge floor. This resulted in a succession of viewing platforms that are very pleasant for sightseers stopping on the bridge. The most well-known illustrations of the baroque Augustus Bridge are the paintings of Canaletto, which frequently place this baroque bridge in the centre of the city’s skyline.

The New Augustus Bridge
By the late 19th century demands grew to navigate larger ships on the Elbe. As a result, the baroque Augustus Bridge was dismantled in 1907 and replaced by a new Augustus Bridge designed by Prof. Kreis and Chief Government Construction Officer Klette. The bridge was conceived as a succession of nine steel reinforced concrete arches with a slight gradient from the centre. In this way, the characteristic elements of the baroque Augustus Bridge were transferred to the new structure. Another characteristic taken from Pöppelmann’s baroque bridge are the viewing platforms. Damage done to the bridge during WW II was repaired in 1948, so this bridge has remained virtually unchanged since 1910. The new Augustus bridge is approximately 355 metres long.
Figure 5.18
Marien Bridge
Source: DRNBW 1998

Figure 5.19
Albert Bridge (Unification Bridge)
Source: DRNBW 1998

Figure 5.20
Marien Railway Bridge
Source: DRNBW 1998
Marien Bridge
The Marien Bridge designed by G. Lohse was initially erected between 1846 and 1852 as a combined railway and road bridge. Elements of the Augustus Bridge were incorporated into its design. Small viewing platforms were constructed above the bridge pylons. The bridge has a width of about 17 metres between the guardrails and also has massive round arches. For about 50 years the bridge carried railway and road traffic until the Marien Railway Bridge was constructed 40 metres downstream. The Marien Bridge has an overall length of about 442 metres. The “Marien Bridge” is directly connected to the so called „Kleine Marienbrücke“ [“Small Marien Bridge”]. According to this fact, the overall length of both of the bridges is 642 metres. The bridge has a width of 20.75 metres.

Albert Bridge
Albert Bridge was opened for traffic in 1875. The bridge has a width of 17.9 metres between guardrails and is also constructed with massive round arches. Characteristic elements of the Augustus and Marien Bridges such as the small viewing points above the support pylons were also included in the design of the Albert Bridge. The bridge’s opening for ship navigation spans 31 metres. The Albert Bridge has an overall length of about 326 metres. This number doesn’t take in account the bridgeheads.

Marien Railway Bridge
Designed by G. Lohse, the Marien Railway Bridge was opened in 1901. It was built as a four-track railway connection. The bridge is designed as a structure in two parts. The shore section of the bridge is located on the Neustadt riverbank and is a massive curved-arch structure. The river crossing is a steel structure on massive supports. Despite its different structural character, elements of the Augustus and Marien Bridges were employed in its design. This bridge also has the characteristic viewing platforms, thus integrating it in the “family” of Dresden city bridges in its overall appearance. The Marien Bridge has an overall length of about 473 metres. The Marien Railway Bridge has a width of 25.48 metres.
Figure 5.21
The Old Carola Bridge
Source: DRNWB 1998

Figure 5.22
The New Carola Bridge
Source: DRNWB 1998

Figure 5.23
Loschwitz Bridge
Source: DRNWB 1998
The Old Carola Bridge
The Old Carola Bridge, designed by H. Klette with the assistance of W. Köpcke, was built between 1892 and 1895. The Old Carola Bridge – like the Marien Railway Bridge – consists of a massive shore section with a steel structure spanning the Elbe on massive pylons. It too was configured with the small above-pylon viewing platforms that are characteristic of Dresden city bridges. The Old Carola Bridge was so severely damaged during WW II that it could not be reconstructed. It had an overall length of 332 metres.

The New Carola Bridge
In 1965, because of changing traffic conditions, competitive proposals were invited for the reconstruction of the Carola Bridge. It was stipulated that the Altstadt current pylon was to be removed in order to improve traffic flow on the Elbe. In addition, tram car and auto traffic had to be separated from each other through the use of safety barriers. A design proposed by engineers Thürmer and Spoelgen called for a structure composed of three pre-stressed concrete box girders that are narrower towards the centre and at full height over the bridge pylons. The middle girder overarching the Elbe has a span width of 120 metres. The bridge has an overall length of 396 metres. The width of the bridge is 35 metres.

The “Blue Wonder“ Loschwitz Bridge
The Loschwitz Bridge, designed by Köpke and Krüger, was built between 1891 and 1893. Preliminary planning dates back to 1872 when the Loschwitz and Blasewitz authorities required a better link for traffic between the two villages. The bridge has a cantilever beam running over three partitions that is flexibly positioned between two massive end trestles. The Loschwitz Bridge was one of the first bridge designs in Europe without pylons and was an engineering sensation at the time. When put into service, the bridge was 11 metres in width, seven metres of which comprise road surface and rail tracks. The two 2-metre wide walkways were initially accommodated inside the bridge. Later, in 1935, the width of the bridge was enlarged to 13.60 metres by re-locating the walkways to the outside. The Loschwitz Bridge has an overall length of 296 metres. The two access ramps on either side of the bridge have a length of 165 metres and 115 metres. Both of the access ramps are provided for the most part with supporting walls.

Bridges outside the UNESCO World Heritage Site “Dresden Elbe Valley“
Kaditz Bridge/Flügelweg Bridge
Kaditz Bridge marks the western boundary of the UNESCO World Heritage Site “Dresden Elbe Valley“. The bridge came into existence in 1929/30, crossing the river
Figure 5.24
Kaditz Bridge
Source: DRNBW 1998

Figure 5.25
The New Flügelweg Bridge
Source: State Capital of Dresden

Figure 5.26
The Autobahn Bridge from Kemnitz to Kaditz
Source: DRNBW 1998

Figure 5.27
New Elbe Autobahn Bridge under construction at Kaditz (1996)
Source: DRNBW 1998
between Übigau (Washington Strasse) and Cotta (Flügelweg). The bridge was built mainly to improve the connection between Kaditz, founded in 1903, and the city. Until the early 1980’s it appeared as Kaditz Bridge in city plans, but in 1984 it was renamed Rudolf Renner Bridge and in 1991 renamed again to Flügelweg Bridge. The bridge was designed by Koch and Wolf and had an overall length of 285 metres. With a span width of 115 metres the bridge was, at the time, the plate girder bridge with the widest span in Europe. In the 1930’s, the neatly and clearly articulated riveted structure of the Kaditz Bridge was considered to exemplify modern steel bridge construction in Germany. The fairfaced bridge pylons and end trestles contributed to the distinctive overall appearance of this bridge. The Kaditz Bridge had an overall width of 17 metres, similar to the other Dresden Elbe bridges, and was provided with access dams on either side with a length of 225 and 175 metres.

The New Flügelweg Bridge

The Kaditz Bridge, later the Flügelweg Bridge, was demolished a few years ago and rebuilt as part of the four-lane Westtangente road. On structural, traffic load and economic grounds, it was no longer considered possible to strengthen the existing bridge. Therefore, from May 2001 to summer 2004 a replacement bridge was constructed with a length of 285 metres and width of 31 metres. This new bridge construction was at the heart of a planned upgrading of the Dresden west outer ring with the already completed conversion of Washington Strasse into a four-lane roadway. The reconstruction of the Flügelweg Bridge was carried out as composite bridge construction. It was completed in summer 2004. The bridge is provided with access dams on either side with a length of 225 and 175 metres.

The Old Autobahn Bridge

The old autobahn bridge is a section of the motorway connection between Chemnitz and Berlin (presently the A4). The main bridge crossed the Elbe with four five-section trusses each of 379 metres length. This steel structure was attached to a reinforced concrete composite roadway, making the overall height of the superstructure about 7 metres. This structure rested on massive bridge pylons. The bridge was 24 metres in width and about 485 metres in length.

The New Autobahn Bridge

During the course of the six-lane expansion of the A4 federal autobahn, the autobahn bridge also had to be rebuilt. The bridge cross-section, including foot and bicycle paths, measures 43 metres. The bridge’s overall length is 496 metres, and its maximum unsupported bridging distance is 130 metres. The bridge was designed by Schüssler-Plan, Düsseldorf, in collaboration with Prof. Kulka, Dresden/Cologne, and opened for traffic in 1998.
Figure 5.28
Comparison of cross-sections of Elbe Valley bridges

Source: DRNBW 1998

The cross-sections of the Flügelweg Bridge have been added
Source: State Capital of Dresden, Department of Urban Planning and Development from 08/12/2003

and cross-section of Waldschlösschen Bridge
Source: State Capital of Dresden; project bidding documents from 30/08/2005
5.5 Conclusion

When the longitudinal sections of the bridges are compared, it is clear that the prospective “Verkehrszug Waldschlösschenbrücke” would be the longest Elbe bridge in Dresden by far. Not including its bridge heads, the prospective Waldschlösschen Bridge would be 636 metres long. This would make it 140 metres longer than the “New Autobahn Bridge” which lies outside the UNESCO World Heritage Site and is 496 metres long. The Waldschlösschen Bridge would be 163 metres longer than the Marien Railway Bridge, which has an overall length of 473 metres and is currently the longest bridge in the UNESCO World Heritage Site.

However, this comparison is focused on the typological and constructive elements of the bridges. It has to be taken in account, that some of the bridges in the Elbe valley are provided with access dams, which are not shown in the longitudinal sections. Regarding the Waldschlösschenbrücke on the other hand, it is planned not to build access ramps. Further on, the lengths of the bridges should always be seen in relationship to the different situations of topography and landscape they are situated in. Both, the changement of topography and landscape during different periods of time had a great impact on the lengths of several bridges in the Elbe valley. For example, in the beginning of chapter 5.4 it was already mentioned, that the “Old Augustus Bridge” used to have a length of 525 – 660 metres originally. This length was shortened gradually. Consequently, the “New Augustus Bridge” erected in the same position than the “Old Augustus Bridge”, has now a length of 355 metres. This modification of dimensions is the result of the changement of the topographical situation of the Elbe valley in the course of the time.

The two multilevel bridge heads on the northern and southern ends of the “Verkehrszug Waldschlösschenbrücke” contribute to a new scale of the bridge within the UNESCO World Heritage Site. Especially on the northern side of the bridge, handling traffic in this way would require the bridgehead to be widened to 50 metres (carriageway including bus stop and merging lane c. 27.00 m, widenings for pedestrians, elevator / staircase, access lanes c. 23.00 m). Within the „Dresden Elbe Valley“ World Heritage Site, no other bridge features such dimensions except for the „New Carola Bridge“, likewise intended to form part of a through traffic route; it has a standard width of c. 35.00 m and - like the planned new bridge – substantial widening at the bridge heads. However, relative to other Dresden bridges, this scale is exceptional.

Also the noise barriers, which are to be constructed at the southern bridge head strengthen the impression that the bridge’s typology will not conform to that of the other city bridges. These features would lend the bridge an appearance that would not fit in with the other types of city bridges in Dresden, it will more closely resemble the bridges outside the UNESCO-world heritage site. As a result of the stipulation that the
highest point of its gradient must remain below the topographical profile of the northern Elbe slope, the northern bridge head would have to be connected to a tunnel which would cross through the northern Elbe slopes. Apart from the “New Carola Bridge”, all the city bridges share certain similarities. These include the arched girders and the lookout terraces, which make the bridges an attractive place to stop and take in the sights. In this way, the bridges are special destinations unto themselves, while also providing unique views of the city and landscape. Last but not least, it is very important to note that due to the almost “trademark” paintings of the Dresden skyline by Canaletto, in which August Bridge is almost always at the centre, this kind of bridge has meanwhile become ingrained as a “typical Dresden city bridge” in the collective memory of Elbe Valley residents and visitors, and has become a defining image.

In addition, a longitudinal view of the bridge reveals that the arched design of its midsection serves the purpose of aesthetic accentuation rather than structural requirements. While it needs to be acknowledged that the minimum building height for the box girder construction at the „Verkehrszug Waldschlösschenbrücke“ river-crossing site can be reduced by this design, with consequent reduction of the bulk of the central part of the bridge structure, other bridges in the Dresden Elbe Valley demonstrate that the required span of 127 metres could be accomplished with less costly technical resources with the help of modern technology. Moreover, the high arch of the Waldschlösschen Bridge would be highly distinctive and set the bridge apart from other bridges in the Dresden Elbe Valley, which are mostly exceedingly modest in design. The characteristic flatness of the Dresden Elbe bridges is a homage to the unique skyline of the Dresden cityscape and the grandeur of its cultural landscape.

Loschwitz Bridge is one exception to this rule. Although its expressive design accentuates this Elbe crossing at least as clearly as the “Verkehrszug Waldschlösschenbrücke” would, there are striking differences between the two bridges. The Loschwitz Bridge crosses the Elbe at a narrow point in the Elbe valley, where Loschwitz and Blasewitz lie directly opposite each other. As a result, its overall length of 296 metres is relatively short. Furthermore, the bridge is part of a technical ensemble consisting of the suspension cable railway, the cable railway and a bridge. This ensemble represents the early industrial period in Dresden’s cityscape. It also marks the onset of the development and cultivation of tourism, an influential phase for the cultural landscape of the Dresden Elbe Valley. Although Loschwitz Bridge may not have been uncontroversial at the time of its construction, these are decisive reasons for the fact that, from today’s point of view, a “harmonious overall impression of a cultural landscape that has evolved over many generations” is to be found at this location in the Elbe valley.


6 Analysis of field-of-view impact

6.1 Technical approach

Drawing up technically sound field-of-view analyses, the methodological core of the field-of-view impact study, basically consists of two procedural steps. Firstly, a digital 3D model, which must contain three dimensional data on the topographical situation, on the object being studied (in this case, the “Verkehrszug Waldschlösschen”) as well as modelling essential landmark structural elements within the area under investigation, has to be made. Secondly, photographs taken under satisfactory visual conditions are required for the field-of-view analysis. These photographs are to be made with a focal length of about 50 mm to simulate human perception to the greatest extent possible (source: jochen rütschlin's exposé; http://www.jr-x.de/digitalfotografie/fototechnik.html). The photographs are then superimposed on perspectives of the 3D model that are produced in the same focal length as the photographs. In this manner it is possible to “overlay” photographs and 3D perspectives so as to create realistic visualisations of the proposed thoroughfare within the current landscape.

Step 1: Creating a fragmentary 3D city model

Various data made available by the State Surveying Office of Saxony was used as the basis for creating the digital 3D model of the study area. Ground points in a regular 5 x 5 metre raster generated from an aerial laser scan were used to create the terrain geometry. A point cloud made of non-ordered laser surveying points with high-resolution ortho-photos and building contours were layered upon one another in order to create an exact reconstruction of the relevant building geometries necessary for the alignment of the perspectives. The laser survey points from an aerial laser scan thereby create a non-ordered raster with an approximate grid size of 1 x 1 metre and do not distinguish between different elements such as trees, bushes, flocks of birds, buildings and ground points. In order to recreate the buildings, their contours are extruded upwards through the terrain geometry to the height of the appropriate points generated by the aerial laser scans. The aerial photographs, as well as the 3D data necessary for the creation of the exact geometry of important buildings or landmark structures, were also made available by the State Surveying Office of Saxony.

The 3D city model is thus composed of three elements:

a. the digital terrain model
b. the buildings relevant to the alignment of the perspectives, as well as landmark elements
**Figure 6.1**
Generation of the 3D Model
Location Waldschlösschen
above left Aerial photograph projection (plan view)
above right Overlay of the topography generated from point cloud, aerial photo and georeferenced building heights
upper left 3D mesh generated from the point cloud
below right 3D mesh, overlay of mesh and georeferenced building heights
Source: v-cube

**Figure 6.2**
Generation of the 3D Model
Location Altstadt (Old City)
above left Aerial photograph projection (plan view)
above right Overlay of the topography generated from point cloud, aerial photo and georeferenced building heights
upper left 3D mesh generated from the point cloud
below right 3D mesh, overlay of mesh and georeferenced building heights
Source: v-cube
c. the 3D model of the design of the “Verkehrszug Waldschlösschen”. The office of Kolb + Ripke Architects provided this 3D model (updated to 14.02.2006). Various details necessary for a complete visualisation of the thoroughfare were added by the firm v-cube. These pertain especially to the bridge heads (for instance tunnel entrances and trough structures). The data contained in the bidding documents from 30.08.2005 served as basis information here.

The digital terrain model (DTM) or digital elevation model (DEM) represents a digital, numerical record of the elevation information of the natural surface of the earth. In order to create the digital terrain model, points on the earth’s surface are filtered out of the aerial laser survey. Separate X-, Y- and Z- co-ordinates of individual points on the earth’s surface excluding elevation information from trees, buildings etc., are thereby generated. Using a special computer programme, these points are connected to one another and interpolated to create a “3D surface mesh”. In this manner, a 3D surface is developed which serves as ground plate for the entire 3D model and which penetrates the 3D geometry of the buildings to be modelled at the appropriate Z-value.

The accuracy of the digital terrain model depends on the laser survey of the State Survey Office. Since the terrain plays only a secondary role in the alignment of the 3D geometry with the photographic positions, it can be assumed that adequate accuracy was achieved with the available data. Because of the extremely large volume of available data, only those parts of the study area relevant to the analysis were recreated. These sections include the viewing and object positions as well as the surrounding referential objects that characterise the land-and cityscape.

**Step 2: Generating the field-of-view analyses**

The selected fields of view were recreated for the required field-of-view analyses in the 3D model. These 3D simulations of the view corridors were then overlaid with digital photographs. This procedure has the advantage of making it possible, using digital photographs, to include trees, bushes etc. (which cannot be represented in the digital terrain model for technical reasons) in the field-of-view analysis. It is thereby possible to realistically represent changes in the urban environment and landscape. Superimposing digital photographs or video clips on the digital city model must be done with extreme care to assure a realistic and unfalsified field-of-view analysis. For this procedure, the camera is referenced within the computer model to enable an exact superimposition of the photograph on the reconstructed computer simulation. For referencing, the exact position from which the photograph is taken (its GPS co-ordinates), the sight vectors (the photographed sight corridor) and the focal length of the photograph, are used. This procedure guarantees an exact and technically faultless overlaying of the photographs with the 3D model because both the photographs and the 3D model are created
Figure 6.3  
Comparison of impressions of the landscape in different seasons  
Source: www.dresden.de

Figure 6.4  
Quelle: v-cube
using GPS co-ordinates.

This technical approach is not “new territory”. It has been applied in a number of studies. It has been tried and tested and has proved successful. A representation of the material quality of the bridge construction is not intended in the context of this study. This is because the design properties of the structure are clearly not the object of the evaluation, but rather its planned physical volume within the landscape.

6.2 Photographic quality
As mentioned in the introduction, only an extremely restricted period of time was allowed for the entire study. It was therefore not possible for the authors to wait for optimal weather conditions to create the photographic base material. In addition, the winter season, during which the study had to be done, is not entirely suitable for the illustration of the characteristic properties of the Elbe valley landscape. These difficult working conditions did not, however, have any effect on the performance of the field-of-view analyses themselves or their evaluation. It must be assumed, however, that because of changed light and colour effects in the spring, summer and autumn landscapes, the bridge construction under examination would stand out more clearly than it did in the winter landscape used in the simulation. As the field-of-view analyses correspond to natural human perception, the appearance of the projected thoroughfare in the landscape of the Elbe valley is correctly represented in scientific terms. An evaluation of the field-of-view analyses was therefore unproblematic.

6.3 Selection of the viewing positions
The analysis of the landscape of the Elbe valley as well as that of the important vantage points carried out in chapter 3, lead to the distinction between two different perception modes in the study area. A distinction must be made between the view of the Elbe valley area while moving, for instance from a riverboat or specially built viewing points. These different kinds of view also require a qualitative differentiation of the field-of-view analyses.
As has been described in detail, various vantage points have been specially constructed in the study area in order to make it possible to view the entire valley area of the Elbe river bend or to view it at impressive places. An observer at one of these lookout points generally allows his or her gaze to “sweep across” the river valley. That means that the observer’s view not only moves in a certain direction, but also attempts to capture the
Figure 6.5 Lookup point Drachenschänke (Königsufer)

Figure 6.6 Scenic balcony Lothringer Weg/ Käthe-Kollwitz-Ufer

Figure 6.7 Lookup point on Albert Bridge (Königsufer)

Figure 6.8 Lookup point at Saloppe waterworks (Königsufer)
entire panorama. The field-of-view analyses from such “classical lookout points” are therefore carried out as cinematic panned perspectives, which realistically simulate this kind of view.

The following vantage points were selected for the field-of-view analyses:

North bank
1. “Bergstation Schwebeseilbahn [cable car hill station] in Loschwitz” lookout tower (all-round vista)
   This lookout point provides a similar panorama over the Elbe valley as that afforded by Restaurant Luisenhof. It is also known as “Dresden’s Balcony”. The field-of-view analysis from this lookout tower is representative of both of these important lookout points on the Dresden Elbe Valley.
2. Loschwitz Bridge (all-round vista to the west)
3. Eckberg Castle. This lookout point was chosen to represent all three Elbe castles as well as the view from “Dinglingers Weinberg”. All four positions provide a similar view of the Elbe valley, with Eckberg Castle located approximately in the geographical centre of the four positions. (all-round vista)
4. Lookout terrace at the “Wasserwerk Saloppe” (all-round vista)
5. Waldschlösschen pavilion (all-round vista), during the day
6. Waldschlösschen pavilion (all-round vista), at night
7. “Drachenschänke” (barbecue site) / passenger ferry (all-round vista)
8. Albert Bridge viewing balcony (panoramic vista)

South bank
9. Dome of the Frauenkirche (view to the east)
10. Former “Antons an der Elbe” (all-round vista)
11. “Scenic balcony” at Lothringer Weg/Käthe-Kollwitz-Ufer (140° panoramic perspective)

There are, in principle, four different possible ways to observe the landscape of the study area while moving:

- Riverboat trips
- By car (Käthe-Kollwitz-Ufer)
- Use of the Elbe valley hiking and cycle paths (Körnerweg on the right side and Leinpfad trail on the left side of the Elbe)
- Use of the higher hiking paths situated on the Elbnordhang
Figure 6.9
Comparison of riverboat and pedestrian field-of-views

Source: author’s illustration
The best method of realistically simulating viewing processes while moving is to use video filming in which the study object can be faded in and out. The ideal observer position for recording the entire Elbe river bend area would be mid-river in this case, since this would allow the observer an undistorted and therefore maximum field of vision over the entire landscape of the Elbe valley. This perspective is equivalent to that from a riverboat trip. Each year about 700,000 boat passengers have this experience and during the last few years the numbers have been growing (source: Info Dresden – Informationen über Sachsens Landeshauptstadt [information on the capital of Saxony] http://www.info-dresden.de/HP_InfoDresden/index3.htm). Since, however, riverboat service was seasonally shut down during the period in which this study was carried out, it was not possible to create a riverboat simulation in the time available. In order to at least partially show how the study area is perceived by a moving observer, photographic sequences were taken from cycle paths and hiking trails along the Elbe valley. These illustrate various spatial impressions during three simulated walks from various directions:

- **Sequence A**
  Elbe valley (cycle) path on the right bank (Körnerweg) from Albert Bridge towards the east up to the planned location of the Waldschlösschen Bridge.

- **Sequenz B**
  Elbe valley (cycle) path on the right side of the river (Körnerweg) from Loschwitz Bridge towards the west up to the planned location of the Waldschlösschen Bridge.

- **Sequenz C**
  Elbe valley (cycle) path on the left side of the river (towpath) from the “scenic balcony” at Käthe-Kollwitz-Ufer (level with Lothringer Weg) up to the planned location of the Waldschlösschen Bridge.
Figure 6.10
Locations of the field-of-view studies

Source: author's illustration/aerial photograph, Saxony Surveying Office
Figure 6.10: Locations of the field-of-view studies

Source: author’s illustration/aerial photograph, Saxony Surveying Office
We would like to make it clear, however, that these simulations can only compliment and not replace video footage from a riverboat. The field of view from the riverbank, which is repeatedly obscured by trees and bushes, is comparable only in a very limited sense to the unrestricted field of view from mid-river. In addition, the human perception of the valley landscape while moving can only be simulated with non-moving images to a very limited extent, even if a series of photographs is used. Furthermore, a wide-angle lens with a 27-mm focal length was used for the photo sequences in order to allow as complete an image of the valley landscape as possible. As a consequence, an optical distortion is unavoidable since the wide-angle lens extends the width of the visual field, causing the horizon and thus also the object of study to appear more distant to the viewer. This effect could have been avoided with video footage. We therefore emphatically recommend that this field-of-view analysis be completed later at a more suitable time of year, by making video films from a riverboat in which images of the study object would be faded in and out.

A few viewing positions that take the planned “Verkehrszug Waldschlösschenbrücke” into more detailed consideration, in particular the effect of the northern bridge head on the Elbe valley landscape, were also included in the field-of-view analysis.

- Stauffenbergallee (visualisation of the trough structure planned for that location)
- below the Waldschlösschen Pavilion (all-round vista) (visualisation of the north bridge head)
- Towpath at level of Waldschlösschen (Elbe cycle path) (all-round vista) (visualisation of the north bridge head)
- Waldschlösschenstrasse (visualisation of the north bridge head)

6.4 Evaluation of the field-of-view analyses
Since the field-of-view analyses were carried out using an all-round cinematic view, it is not possible to print them without distortion. The field-of-view analyses are included in the report on a DVD which can be viewed on a computer or DVD-player.

Vantage positions
North bank
01. “Bergstation Schwebeseilbahn [cable car hill station] in Loschwitz” (all-round vista)
This position permits a panoramic view of the entire study area from the east. The silhouette of Dresden’s inner-city can be seen in the background. From this perspective the planned Waldschlösschen Bridge appears as the “end point” of the Elbe meadows. Because it is at a relatively great distance, the bridge has only limited impact on the
entire panorama. It can be assumed, however, that with better viewing conditions at another time of the year (with green vegetation in the Elbe floodplains), the thoroughfare will have a stronger visual effect than observed in this field-of-view analysis.

02. Loschwitz Bridge (all-round vista)
The Loschwitz Bridge viewing position marks the starting point of the photo sequence along the Körnerweg proceeding to the west. Because of its situation at the extreme easterly edge of the study area, the bend in the Elbe, and its considerable remoteness, the planned Waldschlösschen Bridge can hardly be seen from this vantage point.

03. Schloss Eckberg lookout terrace (all-round vista)
At present, all of the original look-out opportunities afforded by the terraces of the Elbe castles - views of the entire Elbe valley extending to the inner-city - are greatly restricted by overgrown and very high vegetation. The “Verkehrszug Waldschlösschenbrücke” is still, however, clearly visible. The “Verkehrszug Waldschlösschenbrücke” visually shifts further into the middle of the valley as compared to the “Schwebeseilbahn” [cable car] viewing position. Because of the position’s height, the surrounding vegetation, as well as the still relatively great distance from the study object, the planned “Verkehrszug Waldschlösschenbrücke” represents only a slight disruption in the continuity of the landscape in the study area from this perspective.

04. Lookout Terrace at Wasserwerk Saloppe (all-round vista)
This lookout point is the first position in photo sequence B. It affords a total panorama of the Elbe valley extending to the inner city of Dresden. The field-of-view analysis clearly shows that, in this case, practically the entire silhouette of the city would be obscured by the planned “Verkehrszug Waldschlösschenbrücke”. All high points of the silhouette disappear within or behind the planned bridge structure and its arch construction, which from this position appears in the middle of the field of view. The “Wasserwerk Saloppe” lookout point would entirely lose its original lookout quality in the direction of the inner-city as a result of the proposed bridge construction.

05. Waldschlösschen Pavilion (all-round vista), during the day
The “Waldschlösschen view” from the Waldschlösschen pavilion affords a panorama over Dresden’s entire urban silhouette, which is “framed” by the characteristic Elbe meadows in the foreground. As a result of its relatively low lying situation, the planned bridge structure allows, in principle, a view of the city skyline from this vantage point. Because of current vegetation, the northern bridgehead is not visible. As a result of the bridge structure, however, the Elbe meadows, a substantial component in the original panoramic composition afforded by this position, will be visually divided in two. Overall, this effect severely alters the original “Waldschlösschen view” of Dresden’s silhouette.
06. Waldschlösschen Pavilion (all-round vista), at night
At the time of the visualisation, the exact lighting plan for the bridge structure was not yet available to the authors. Only the planned positions and the number and height of the light poles on the bridge were known. The visualisation carried out here is based on an estimate of the amount of light emitted from these fixtures. Should the bridge be constructed, we can expect additional sources of light, for instance traffic lights, -signs, etc, to be used. When in use, vehicles crossing the bridge will constitute an additional source of light.
Dresden’s inner city skyline, above all the riverbank at the Brühlschen Terrace, is easily recognisable from the Waldschlösschen pavilion at night because it is very well lit. Since there are no light sources on the Elbe meadows, the illuminated silhouette of Dresden’s inner city is set very clearly in contrast with the Elbe valley landscape. As a result of this contrasting effect, Dresden’s city skyline, as seen from the Waldschlösschen pavilion, is more impressively recognisable at night than during the day. Competing light sources in the foreground distinctly diminish the quality of the night panorama. As a new intensive source of light, the planned “Waldschlösschen Bridge” must therefore be regarded as an interference. Lighting on the bridge structure diminishes the contrast between the lit urban area and the dark landscape of the Elbe floodplains. This not only degrades the view of the Waldschlösschen at night, but also impairs the nighttime visual effect of the Elbe valley.

07. Drachenschänke (barbecue site/passenger ferry) (all-round vista)
From the passenger ferry at the “Drachenschänke”, there is an all-round view over the Elbe meadows, extending as far as the Elbe castles to the east and Dresden’s inner city to the west. The planned “Verkehrszug Waldschlösschenbrücke” will profoundly change the view to the east as the arch of the bridge will take up its optical centre. The continuity of the Elbe valley bend will, however, remain recognisable to the observer as important landmarks, like the Elbe castles and the northern Elbe slopes, remain visible.

08. Albert Bridge lookout balcony (all-round vista)
Similar to the situation from lookout point “Loschwitz Bridge”, the outermost lookout point on the eastern side, the Elbe valley landscape will be only slightly visually changed by the “Verkehrszug Waldschlösschenbrücke” as viewed from this point on Albert Bridge. The foreshore section of the bridge on the Elbe’s right bank is visible on the horizon, while the arch of the bridge is obscured by vegetation. Overall, the planned bridge structure, as seen from this position in the valley, is hardly visible because of the relatively large distance involved.
South Bank
09. Dome of the Frauenkirche (view to the east)
Similar to the “Bergstation Schwebeseilbahn in Loschwitz” vantage point from the east, the newly built dome of the Frauenkirche allows a panorama from the west over the entire study area. The Elbe’s north slope with its castles is still well visible in the distance. The planned “Verkehrszug Waldschlösschenbrücke” is, however, hardly discernible in the background because of the great distance.

10. Lookout point at former “Antons an der Elbe”
This lookout point allows a view of the Waldschlösschen brewery to the northeast and of the Elbe castles to the east.
Because it is so close, the planned “Verkehrszug Waldschlösschenbrücke” almost entirely obscures these landmarks and would thus represent a distinct caesura in the landscape. The massiveness of the foundations as well as the breadth of the bridge’s supporting structure is fully visible from here. In addition, it is clear that the Elbe meadows will experience great morphological change, especially due to the north bridge head. It is characteristic of the Elbe meadows at Waldschlösschenstrasse, that they have remained undeveloped. Consequently they extend – and it is the only place within the studied Elbe river bend area where they do so – up as far as Bautzner Strasse. This special quality will be greatly impaired by the construction of the north bridge head, since this characteristic part of the Elbe meadows will be covered to about 50% by the north bridge head and the northern part of the foreshore bridge. This effect is further amplified by the extension of the bridge head with the tunnel entrances, lifts and stairways in this area.

11. “Scenic balcony” at Lothinger Weg/Käthe-Kollwitz-Ufer (view to the northwest) (140°- panoramic perspective)
The view to the west from this position extends to the apex of the Elbe river bend and to the east as far as the Loschwitz Bridge. In spite of the relatively great distance, the “Verkehrszug Waldschlösschenbrücke” can be seen quite clearly from this perspective. The bridge structure obscures the view of the further course of the Elbe north slope towards the inner city, thus impairing the visual coherence of the valley as seen from this position.
Sequence A: Körnerweg from the Albert Bridge towards Waldschlösschen Bridge

Source: v-cube
View Sequences

1. Sequence A
   Elbe valley (bicycle) trail on the right bank (Körnerweg) from Albert Bridge to the east extending to the planned location of the Waldschlösschen Bridge
   This sequence of views shows, rather like the previous one, that the planned “Verkehrszug Waldschlösschenbrücke” at first appears only on the observer’s horizon (position Albert Bridge) but then increasingly occupies the field of vision. In this sequence of views, a visual break is created by the planned bridge construction in the valley space as viewed from the “Drachenschänke”, as the Elbe castles, which from this position would otherwise be visible as characteristic landmarks on the horizon, are partially obscured by the planned bridge. The visual coherence of the Elbe meadows is also dissected from this vantage point. The bridge structure moves fully into the field of vision at the end of this sequence of views, although sightlines towards the eastern part of the Elbe valley reappear through underneath the bridge structure.

2. Sequence B
   Elbe valley (bicycle) trail on the right bank (Körnerweg) from the Elbe castles towards the west to the planned location of Waldschlösschen Bridge
   This sequence of views shows how a moving observer perceives the landscape at the bend in the Elbe valley in its spatial context. Due to the curve of the river, different sightlines keep coming into view, landmarks and dominant elements in the landscape become visible and then disappear again as the observer proceeds along the river bend. At first, the planned “Verkehrszug Waldschlösschenbrücke” is hardly visible. It comes fully into view at the level of the Saloppe Waterworks. Here it creates a caesura in the spatial cohesiveness of the Elbe valley bend. The uniformity of the valley landscape and the ability to perceive it as a spatial continuum is interrupted. At the end of the sequence of views, the inner city (and the Frauenkirche) can be sighted again through underneath the bridge structure.

3. Sequence C
   Elbe valley (bicycle) trail on the left bank (towpath) beginning from the Käthe-Kollwitz-Ufer scenic balcony (level of Lothringer Strasse) extending to the proposed location of Waldschlösschen Bridge
   The main characteristic of this sequence of views is the visual experience of the enormous expanse of the southern Elbe valley meadows. At the end of the sequence of views, it becomes apparent that here, too, the cohesive nature of the valley landscape is interrupted. The silhouette of Dresden’s inner city, which originally signalled the valley’s continuation, is now only partially visible.
Sequence B: (at Villa Stockhausen) up to Waldschlösschen Bridge  Source: v-cube
Details
1. Stauffenbergerallee
In Stauffenbergerallee, distinct changes would occur “as a matter of course” due to the planned ramp to the tunnel entrance which would visually interrupt the continuity of the street. The planned construction project is not situated in the villa district. This means that the configuration of the street space is affected but not the buildings themselves. The massive scale of the planned ramp structure would not seem entirely out of place at this location because this scale has already been introduced by the neighbouring local government headquarters building, i.e. its plinth wall. However, the change to the existing urban space is still considerable. The intervention area, however, lies outside the UNESCO protected areas (core and buffer zones).

2. Waldschlösschenstraße
This visualisation is based on the documentation provided with the invitation to bid from 30.08.2005. This documentation contains information regarding the location of the planned traffic structures (tunnel entrance, trough structure) joining the north bridge head but not about the changes to the terrain planned for this area (project unit 4). In order to be able to complete the visualisation, it was therefore necessary to use planning documents from 14.02. 2006, provided by the office of Kolb + Ripke. The visualisation shows the volume of the planned constructions for the north bridge head, but not the materials associated with the individual elements.

The visualisation shows the planned bridge structure in the background and, in the foreground, the top edge of the tunnel entrance at the north bridge head. The following elements appear in the field of view from left to right: the lift shaft, which connects the bus stop located at street level with the level above the tunnel entrance; the upper edge of the tunnel entrance; the boundaries of a proposed plant bed (plans from Kolb+Ripke); the outline of the trough structure on the west side of the bridge head. When the planned construction measures are superimposed on drawings of the current landscape, it becomes clear that changes to the topography (landfill) as well as to the course of Oberkiesweg (new route between the plant bed and the west trough structure) would become necessary. It is also clearly visible from this position that the continuity of the Elbe meadows would be interrupted by the bridge structure. The planned construction project, as a whole, result in very significant changes to the spatial character of the Waldschlösschenstrasse area.

3. Below the Waldschlösschen pavilion
The view from the Körnerweg below the Waldschlösschen pavilion presents a panorama extending to the inner city including the characteristic silhouette of the dome of the Frauenkirche. The broadening of the valley at the apex of the Elbe river bend can also be clearly seen. The full breadth of the Elbe valley can be clearly seen, from the
Sequence C: Scenic balcony at Käthe-Kollwitz-Ufer towards Waldschlösschen Bridge  Source: v-cube
Waldschlösschen pavilion, the Elbe meadows, which extend up to Bautzner Strasse, all the way to Johannstadt. Views that reach far into the eastern part of the Elbe river bend up to the Elbe castles are also possible. The visualisation of the bridge structure indicates a notable change in this picture. Although the city silhouette and the further course of the Elbe meadows are still recognisable through beneath the bridge structure, the quality of the skyline is largely lost since the bridge structure restricts the vertical effect of the city’s spires and towers. The north bridge head also moves squarely into the field-of-view from this position. This greatly diminishes the impression of breadth engendered by the Elbe meadows below the “Prussian Quarter”. Overall, the bridge structure represents a caesura in the valley landscape. The quality of this vantage point, which allows an almost total overview of the entire Elbe river bend between the Albert and Loschwitz bridges, is largely lost.

4. Towpath at level of the Waldschlösschen
This spot on the Elbe valley bicycle trail permits a view extending to the inner city. The characteristic broadening of the Elbe meadows up to the Bautzner Strasse is almost completely discernible on the right bank. The visualisation shows that, firstly, the view of the inner city is almost completely obscured by the bridge structure. Secondly, the bulk of the north bridge head moves squarely into the field of view on the right bank of the Elbe. The impression of massive bulk is created by the breadth of the bridge head and all its constructive parts, such as the tunnel entrance, lift structure and lateral stairways. The silhouette effect of the “Prussian Quarter” towards the Elbe valley will also be decisively changed.

6.5 Conclusion
The field-of-view analyses undertaken here show that because the “Verkehrszug Waldschlösschen Bridge” is planned at the apex of the Elbe river bend, it would be situated at a very sensitive location regarding the spatial perception of this landscape. At the moment, the “pedestrian perspective” while crossing the valley is of a coherent landscape with visual qualities essentially based on two factors: firstly, from this perspective, the Elbe meadows continuing into the distance form the defining element of the landscape, so that in spite of the curvature of the valley, a visual continuity is maintained which builds up sequentially to form the total spatial experience. Secondly, during crossings of the valley, the landmarks and dominant elements, for instance the Elbe castles or the city silhouette, are of central significance. Because of the curvature of the Elbe valley, they enter successively into the field of view, whereby the observer also has the impression of a coherent and continuous space. Should the bridge structure be realised as part of the construction project, the continuity of the visual experience
would no longer exist at various locations. It would visually cut the Elbe river bend in two.

This effect is especially clear from vantage points at the apex of the Elbe river bend. These viewing points illustrate the spatial coherence of the Elbe bend in a special manner because it is possible from there to look into both the eastern and western sides of the valley. The planned bridge structure, however, would cause the valley to visually fall into two parts, greatly changing its landscape quality.

From other viewing points, different visual effects are produced. The visual impact diminishes as the viewer proceeds to the east or the west of the study area. So, for instance, almost no visual impact results from the planned thoroughfare when viewed from the lookout points at the hill station of the suspension cable railway at Loschwitz or the dome of the Frauenkirche. This is a result of the greater distance from the apex of the Elbe valley bend. From other viewing points nearer to the apex, the impairment is greater. The original panoramic composition from the Saloppe waterworks lookout point for instance, must be regarded as totally devalued because, from that location, Dresden’s silhouette is completely obscured.

Generally panoramas from viewing locations at higher elevations, for instance the terrace at the Elbe castles, are less impaired by the planned construction since, from there, the valley can still be perceived in its total context. This is also partially true for the well known “Waldschlösschen view”. From this position, the view of Dresden’s skyline above the Waldschlösschen Bridge would still be possible. From there, however, the Elbe meadows, which originally “framed” the city silhouette and are therefore an essential component of this panoramic view, are cut in two. This would greatly degrade this “classical” view of Dresden’s silhouette, familiar from paintings and photographs.

Additional visual changes would occur around the north bridge head. It has been a characteristic of this landscape until now, that the Elbe meadows have extended up to Bautzner Strasse. This allowed, on the one hand, a connection between the “Prussian Quarter“ and the Elbe floodplains and, on the other, an unimpaired view from the Elbe valley towards the Waldschlösschen brewery. As a result of the extension of the planned bridge head at this location, a considerable part of the Elbe meadows, which up to now have been left open, would be built over, thereby changing the characteristic local morphology of the Elbe meadowland.

Similarly, the area of Stauffenbergallee would be greatly affected by the planned trough structure, significantly changing the character of the street. This measure, however, affects an area beyond the UNESCO protected zones.
Because of the currently complex situation resulting from various construction measures planned for the south bridge head, it is difficult to fully assess the configurational changes that the implementation of the planned thoroughfare and bridge head would have here. The spatial changes would have the greatest impact as seen from the Elbe meadows, where the breadth of the south bridge head would become fully visible. Because of its current appearance (construction sites, temporary structures etc.) it was not possible to carry out a useful visualisation.

Overall it appears that for Dresden Elbe Valley as a World Cultural Heritage site, the proposed “Verkehrszug Waldschlösschenbrücke” causes problems because of the bulk of the north bridge head, and above all because of the visual “dissection” of the Elbe valley bend.
7 Conclusions/Recommendations

It is important to emphasise that the purpose of this report is to study and evaluate the visual effects of the planned “Verkehrszug Waldschlösschenbrücke” [Waldschlösschen Bridge thoroughfare] on the World Heritage Site “Dresden Elbe Valley“. For this reason, a summary statement like this one can neither reflect traffic-related, economic and legal aspects of the project, nor can it demonstrate untested alternatives in terms of the bridge's visual effects. This statement is the result of an analysis of one aspect only, which is however, of exceptional significance with regard to securing, maintaining and developing the unique qualities of this Wold Heritage site. Dresden Elbe Valley’s status as a World Heritage site requires a circumspect approach to development that will allow the cultural landscape to evolve with the same caution and respect shown to it in centuries past.

While the summary at the end of each chapter sets out a number of preliminary conclusions, the result of the entire study can be summarized into three broad statements:

1. The Waldschlösschen Bridge does not fit in with the existing series of Dresden city bridges.

   Both in terms of its dimension and scale as well as in its visual appearance and technical specifications, it is a “misfit” within the context of other Dresden bridges within the World Heritage Site area. But in particular, it is the tunnel extension and the multi-level junctions to the bridge heads with their technical apparatus which give the “Verkehrszug Waldschlösschenbrücke“ the character of an expressway. It is therefore a virtual certainty that the Waldschlösschen Bridge would not demonstrate the qualities that can be associated with bridges, and which exemplify the culture of Dresden city bridges. As part of the city’s public spaces, they provide unique perspectives on the city itself as well as the Elbe Valley landscape. They speak a “language” which is strongly associated with Dresden and which is rooted in the consciousness of the local population. By contrast, the Waldschlösschen Bridge demonstrates characteristics of bridges from outside the World Heritage site area, which almost exclusively serve the purpose of handling traffic with minimal consideration for standards of urban design.

2. The Waldschlösschen Bridge obscures a number of views of the Dresden skyline and the Elbe Valley which are of historical importance as well as continuing relevance to daily life in the city.

   Because of the large distances which characterise the area of the Elbe river bend, as well
Figure 7.1
Schematic drawing of the division of the Elbe river bend

Source: author’s illustration / aerial view, State Office for Land Survey, Saxony
as the effect of diffuse winter light which hinders visibility, the Waldschlösschen Bridge does not disturb the view from several of the vantage points under study. Nevertheless, there are several important vantage points which were used to dramatic effect in the past, and which form part of the individual character of this cultural landscape. These include the stations along the valley routes on either side of the Elbe river bend, which create a series of sequential impressions of the landscape culminating in a magnificent experience of the landscape today, which would be considerably compromised in future. The same holds true for legendary vantage points important to the arts, such as the view from the Waldschlösschen itself, where the Dresden skyline would be framed by the Waldschlösschen Bridge rather than the Elbe meadows, and where the view into the distant parts of the Elbe valley would also become alien. Night views from various directions and vantage points would be equally disturbed, as a source of bright artificial light would be created in the relatively unlit Elbe river bend.

But the most decisive factor in this summary statement from the point of view of the assessors is the third observation:

3. The Waldschlösschen Bridge cuts into the cohesive landscape of the Elbe river bend at its most sensitive point, splitting it irreversibly into two halves.

The actual view and the immediate experience of this area, together with current aerial photographs and historical maps, establish the uniqueness of the Elbe river bend with the Elbe meadows between Albert Bridge and Loschwitz Bridge. Comparative analyses of inner-city river landscapes in other large European cities further demonstrate the unique character and great value of this cohesive cultural landscape. In this section of the landscape, the Elbe floodplains have remained intact in their totality, and together with the Neustadt Elbe meadows and the Elbe area between Loschwitz and Pillnitz, they represent a cultural landscape of outstanding importance, which is why almost the entire section of the Elbe valley within the Dresden urban zone was inscribed on the World Heritage List, not only the inner city area or individual architectural sites or parks.

The Elbe meadows here form a virtually unobstructed flood plain area with trees scattered only here and there, creating a unique impression of open space in the middle of the Dresden metropolitan area. However, this effect can only come about where the view does not immediately encounter obstructions. The striking effect of this landscape view is lent additional force by the shape of the bend in the valley, as the architectural features of the neighbouring areas retreat into the background, and the impression of endless distance arises. Providing a singular frame to this view of the Elbe meadows is the predominantly green backdrop of the north slopes of the Elbe, where the Elbe castles with their gardens and vineyards appear.
At the same height as the Waldschlösschen are the broadest local expanses of the Elbe meadows and the peak of the Elbe river bend, its median point between Altstadt and Loschwitz. It is from this point that two emblems of Dresden are visible: the city skyline with the restored Frauenkirche, as well as that engineering marvel of the Elbe Valley, the “Blue Wonder” bridge.

The position of the vantage point at Waldschlösschen, in the middle of the Elbe river bend, contributes to the feeling of open space, while both distant landmarks make a combined visual impression. The distances to the Frauenkirche and to the Loschwitz Bridge are combined in the mind of the viewer. For this effect to take place, the spatial context of the valley and floodplain must be undisturbed.

Exactly at this point, that is, at the vertex of the bend, is where the Waldschlösschen Bridge would create a break in the view of the landscape, a split into two almost equally sized areas, but which could not be visually recombined to create a whole. The sense of space would be destroyed; it would be lost over the long term, thereby effacing this particular experience of landscape. Any bridge is more than just a stroke within a landscape. When a landscape is truly appreciated, our visual, acoustic, and tactile sense-perceptions are all stimulated. Thus, the sounds of bird song or of water flowing heighten a person’s experience of a landscape. But by the same token, it is not difficult to imagine that the effect of an optical split of the Elbe Valley would be exacerbated by the noise of a four-lane bridge.

Based on these considerations, from the point of view of this report, the only conclusion which can be made is that the visual impact of the projected Waldschlösschen Bridge would be severe. In terms of the limited scope of the question under investigation, the conclusion even has to be drawn that building the bridge in this place would irreversibly damage the unique qualities of the Elbe Valley.

Until now, the planning process has been marked by a series of unfortunate circumstances. The fact that the projected building date of the Waldschlösschen Bridge and the application procedure for the Dresden Elbe Valley’s inclusion in the World Heritage Site list have overlapped in time has created a situation where productive dialogue towards an acceptable solution has become difficult. The citizens’ decision to approve the project, taken together with the legal situation following the court decision, have resulted in additional circumstances which constrain the discussion of alternatives to the “Verkehrszug Waldschlösschenbrücke”, particularly since the financial and legal implications of the advertised project are considerable. However, these are primarily political factors, and as such must not be included in the assessor’s report.
Nor may the assessors outline any alternatives, much less recommend them, without prior investigation. For that reason, the assessors consider it imperative that productive use is made of the “pause for thought” called for until autumn 2006 by ICOMOS. All parties to the proceedings should engage in close dialogue during these months and thoroughly explore the available options.
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Planfeststellungsbeschluss von 25.02.2004 für das Bauvorhaben Neubau des Verkehrszugs Waldschlösschenbrücke; (im Text PFS 2003 genannt)


### Plans

compiled by state capital of Dresden, Dresden urban planning office, February 2006

1. Generalbauplan der Stadt von 1862 (rekonstruierter Plan von Dr. Werner Pampel, Dresden, Basisplan 1872)
2. Stadtplan 1891
4. Bebauungsplan Johannstadt Nord 1900 (Stadtarchiv Dresden)
5. Stadtplan 1905 (Stadtarchiv Dresden)
6. Stadtplan 1908
7. Elbufergestaltung 1934 von Paul Wolf (Stadtplanungsamt, Fotostelle)
8. Hauptverkehrsplan 1937 (Stadtplanungsamt, Fotostelle)

### Internet

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Content
Institute of Urban Design and Regional Planning, RW TH Aachen University
cand. arch. Anne Eaton
Dipl.-Ing. Michael Kloos
Dipl.-Ing. Bauass. Christine Korus
mgr inz. arch. Monika Nadrowska
Dr.-Ing. Jörg Rekittke
cand. arch. Philipp Tebart
Univ.-Prof. Dipl.-Ing. Kunibert Wachten

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