The production of urban space through mobility

The case of the Stadtbahn in Berlin

Band 1

vorgelegt von
Dipl. - Ing. Arch.
Paola Alfaro d'Alençon

Von der Fakultät VI - Planen Bauen Umwelt
der Technischen Universität Berlin
Zur Erlangung des akademischen Grades
Doktor der Ingenieurwissenschaften
Dr.-Ing.

genehmigte Dissertation

Promotionsausschuss:

Vorsitzender: Prof. Dipl. -Ing. Klaus Zillich
Berichter: Prof. Dr. Peter Herrle
Berichter: Prof. Dr. Rosanna Forray Claps

Tag der wissenschaftlichen Aussprache: 06.10.2010

Berlin 2011
D 83

ACKNOWLEDGMENTS

This work is the result of a long process that I could not have concluded without the support of many institutions, teachers, colleagues, students and friends in Berlin, Santiago de Chile, New York City and the Netherlands. A complete account of all the people would be endless, but I would like to specifically thank the Universidad Catolica de Chile, for accepting me in their doctorate program, the supportive feedbacks of my reviewing committee and granting me a scholarship that enabled me to research and visit practical cases of urban transportation development abroad. In this context my special thanks also goes to Cornell University in Ithaca, NY, USA and the Berlage Institute in Rotterdam were I was a guest researcher.

I owe special gratitude to Prof. Dr. Peter Herrle, my teacher and supervisor at the Habitat Unit of the Technical University of Berlin, who greatly encouraged me in my research, provided me with fundamental knowledge on urban processes and, in a multitude of dialogs, helped me structure my research findings. I am also very grateful to my supervisor Prof. Dr. Rosanna Forray at the Universidad Catolica de Chile who also encouraged me from the beginning and helped me to understand transportation issues from a social-spatial perspective.

Special thanks go to my colleague Natalie Heger, with whom I started the adventure of researching the Stadtbahn in Berlin during our diploma project in 1999, Deike Peters and Johannes Novy for sparking my enthusiasm for the case and its urban complexity through publications and shared workshops. I thank the Berlin architect Uwe Becker for his help in understanding Berlin's urban history and recent development process. The organizers of the Friends of the Highline initiative in NYC and Prof. Anne Klingmann for all the information on initiative-based urban transportation space design, Andrea Benze and Ren Strabucci for the critical discussions on urban matters from an architect's point of view. Thank you to Rachel Lee for editing my English, Astrid Ley and Josefine Fokdal for their critical reviews and Consuelo Montaner for her supportive help with the drawings. I also owe special thanks to all the students of my design and research classes for their proactive enthusiasm and for the valuable information they gathered.

I would also like to thank all the stakeholders of the case studies and people who shared their knowledge and stories with me, such as Mr. Jentsch from DB Station&Sevice, Mr. Demmler from DB Service Immobilien GmbH, Mr. Hillmer from GMP -Hamburg, Quartiermanagements, urban activists, community groups and artists in Moabit and Friedrichshain-Kreuzberg, Mr. Sgourous at the Senatsverwaltung für Stadtentwicklung, and arches shopkeepers at Savignyplatz and Jannowitzbrücke.

CONTENTS

ACKNOWLEDGMENTS 2

CONTENTS 3

FIGURES 6

TABLES 8

1 INTRODUCTION 9

2 THEORETICAL FRAMEWORK OF URBAN TRANSPORTATION SPACE 21

2.1 THEORETICAL FRAMEWORK: BETWEEN NETWORK AND PLACE 22
2.1.1 The transportation discourse 23
2.1.2 Discourses on urban space 33
2.1.2.1. The perception of transportation space from the urban research and planning perspective 34
2.1.2.2. Functional and 'sector-based' approaches: The crisis of the city 36
2.1.2.3. The city from the urban research and planning perspective: Relational urban space models, or from city models to urban processes 39
2.1.2.4. 'Place-making' - for economic and planning strategies 44

2.2 THEORETICAL FRAMEWORK: WHAT IS AN URBAN TRANSPORTATION SPACE? TRANSPORT, URBAN PRACTICES AND COMMERCE 46
2.2.1 New Market: Rails, major urban scales, the department store and land prices ..47
2.2.2 The marginalized railway space: Cars, urban group form, and production and consumption patchwork 49
2.2.3 Current urban transportation space design strategies: Or how railways relate to urban space and service: Transport, peri-urban space, consumption and service 51

2.3 SYNTHESIS AND CONCEPTUAL FRAMEWORK: COPING WITH COMPLEXITY 61
2.3.1 Clarification of the term: Urban transportation space 62
2.3.2 Hybridization and fragmentation as conceptual framework of research 64
2.3.3 Research Assumptions 68
2.3.4 Research questions and hypothesis 68
2.3.5 Research goals and specific procedure 70

3 METHODOLOGY 73

3.1 CONCEPTUALIZATION OF 'SPACE' 74
3.1.1 The 'Aktionsraumforschung' 75

3.2 CASE STUDY SELECTION 76

3.3 METHODS OF DATA COLLECTION 79
3.3.1 Structure of the field research and evaluation of data 81

3.4 SPECIFIC RESEARCH PHASES 82
3.4.1 Research on the hybridization process 82
3.4.2 Research on fragmented space and urban qualities 85

3.5 LIMITATIONS OF THE RESEARCH 87

4 THE DEVELOPMENT OF THE STADTBAHN AS TRANSPORTATION SPACE IN BERLIN 90

4.1 GROWING WITH THE TRAIN: FROM ORTH'S ORIGINAL PROJECT PLAN TO THE IMPLEMENTATION PROCESS OF THE STADTBAHN IN BERLIN IN 1873 – 1910 91
4.1.1 The planning concepts for the Stadtbahn space 92
4.1.1.1. Orth's original transportation planning concept 92
4.1.1.2. The urban concepts during the Stadtbahn´s implementation 94
4.1.1.3. Commercial dynamics related to the Stadtbahn project: From private to public service 95
4.1.2 The emerging urban transportation space: The implementation 102
4.1.2.1. Complex dialogs of varying urban interests: the *Stadtbahn's* line route changes 102
4.1.2.2. The Stadtbahn development 107
4.1.3 The production of urban space with the railway in the industrial Berlin, 1882-1910 109
4.1.3.1. The character of the *Stadtbahn´*s viaduct: Dialog with the adjacent area 110
4.1.3.2. The contrast to the principle for the station and square: The 'Bahnhofsquartier' 114

4.2 FORCING THE DIVISION WITH THE TRAIN: FROM THE DIVISION OF BERLIN'S TRANSPORTATION NETWORK TO THE BOYCOTT OF THE STADTBAHN IN 1961 – 1985 122
4.2.1 The planning concepts for the Stadtbahn space 123
4.2.1.1. The urban concepts in the divided city 126
4.2.1.2. Commercial and political boycott and the consecquences for the Stadtbahn 128
4.2.2 The emerging urban transportation space 129
4.2.2.1. Complex dialogs of varying urban interests: The dislocated role of the Stadtbahn 129
4.2.2.2. The Stadtbahn development 130
4.2.3 The production of urban space with the railway in the divided Berlin, 1961-1985 133
4.2.3.1. The character of the *Stadtbahn´*s viaduct: Closing the *Stadtbahn´*s arches 134
4.2.3.2. The contrast to the principle for the station and square: The marginalization of the *Bahnhofsviertel* 137

4.3 SEARCHING FOR THE CENTER WITH THE TRAIN: THE CURRENT URBAN DEVELOPMENT IN BERLIN AND THE ROLE OF THE STADTBAHN 2000 - 2009 149
4.3.1 Planning concepts for the Stadtbahn 149
4.3.1.1. Transportation planning concept '*Pilzkonzept*' and the *Stadtbahn* 149
4.3.1.2. The urban concepts and the '*Planwerk Innenstadt*' for Berlin 155
4.3.1.3. Commercial dynamics related to the Stadtbahn: 'The Renaissance of the Station´ 160
4.3.2 The emerging urban transportation space 163
4.3.2.1. Complex dialogs of varying urban interests: The restructuring of the transportation network 163
4.3.2.2 The empirical survey on the emerging *Stadtbahn* space between 2005 and 2009 168
4.3.3 The production of urban Space with the Railway in Berlin between 2005 – 2009 196
4.3.4 The character of the Stadtbahn´s viaduct: Identity builder and the loss of arches and manufacturing units 198
4.3.5 The contrast to the principle of the station and its station square: The empty square 200

4.4 SYNTHESIS: FROM NETWORK VS. URBAN SPACE TO PLACE-MAKING 206
4.4.1 The relevance of the viaduct in the Stadtbahn space 206

5 SOCIAL–SPATIAL DEVELOPMENTS OF THE VIADUCT ARCHES: BETWEEN 'APPROPRIATION' AND 'PLACE-MAKING' 219

5.1 CASE 1: PARTIAL VIADUCT STRUCTURE AND THE 'FLAGSHIP' DEVELOPMENT OF THE HAUPTBAHNHOF AREA 220
5.1.1 The research on *Hauptbahnhof*'s emerging urban space in terms of transportation performance, urban context and associated commercial activities 222
5.1.2 A space of varying urban interests: The dominant space for transportation and commercial activities 234

5.2 CASE 2: MULTI- USES IN THE ARCHES AND THE HIGH-DENSITY SAVIGNYPLATZ AREA 238
5.2.1 The research on *Savignyplatz*'s emerging urban space in terms of transportation performance, urban context and associated commercial activities 240
5.2.2 The space of varying urban interest: Between appropriation and 'place-making' 246

5.3 CASE 3: TEMPORAL USES IN THE ARCHES AND EMERGING DEVELOPMENT OF THE *JANNOWITZBRÜCKE* AREA 249
5.3.1 The research on *Jannowitzbrücke:* emerging urban space in terms of transportation performance, urban context and associated commercial activities 249
5.3.2 The space of varying urban interest: The appropriation of the arches and buffer area 256

5.4 RESEARCH DISCUSSION: THE DOMINANT STATION AREA AND LOCAL MICRO-SPACES 260
5.4.1 The dominant market: Transportation concentration, mass consumption and predesigned urban development 261
5.4.2 Different concepts for the urban 'passage': Integrated transportation supply, urban conflicts and commercial struggles 263
5.4.3 Appropriation of space by creative and small-scale entrepreneurship: Transportation supply, diverse spectrum of commercial uses and temporary urban context 265

6 CONCLUSION: THE URBANIZATION OF THE STADTBAHN SPACE REPRESENTS MORE THAN THE DEVELOPMENT OF THE STATIONS 268

6.1 REFLECTIONS ON THE TRANSPORTATION-COMMERCIAL – SPATIAL CONFIGURATION 269

6.2 WHAT IS AN URBAN TRANSPORTATION SPACE TODAY? 274

REFERENCES 281

INTERNET 286

NEWSPAPER ARTICLES 287

INTERVIEW PARTNERS 287

GENERAL BIBLIOGRAPHY 288

FIGURES

Figure 2-1 Diagram of integrated transportation planning model.
(Source: Kutter, 2005) 31
Figure 2-2 Diagram for a rational planning model: through the definition of elements.
(Source: Luzi, 2001) 31
Figure 2-3 Diagram for the Land-Use Transport Feedback Cycle theory. (Source: Blana, 2003)....32
Figure 2-4 The station emerged as a new building typology. (Source: Alfaro, 2009).....58
Figure 2-5 Group forms and Megastructure, Kenzo Tange master plan Tokio in 1960. 59
Figure 2-6 'Autogerechte Stadt', Hans Sharoun master plan for Berlin in 1946 (Source: Oswalt, 2000)....59
Figure 2-7 Promenade Plantée, Paris (Sources: Alfaro d´Alençon (2006)) and Highline, New York
(Sources: a+t, 2006; pp. 100 - 110)....60
Figure 2-8 Specific research procedure showing the five research aspects (drawing by the author)....71
Figure 3-1 Research Phase 1 (Hybridization) and research Phase 2 (Fragmented Space and Qualities)
with the own individual stages....78
Figure 4-1 The railway development before the *Stadtbahn* was built in 1882 (Source: Klünner, 1985). 99
Figure 4-2 Kings Trench: The government-owned land for the *Stadtbahn* (Source: Schmidt, Eilhardt,
1994)....99
Figure 4-3 The *Stadtbahn's* line route changes of the *Stadtbahn (*Source: Dittfurth (Edit.), 1993). 100
Figure 4-4 Illustration of the *Stadtbahn* design set in the existing landscape one decade before its
construction (Source: Klünner 1985). 100
Figure 4-5 The 'real-life´ context of implementation in the inner-area of Berlin (Source: Gottwaldt, Handke,
1998)....101
Figure 4-6 The development of the *Stadtbahn* railway line over the King's Trench "Bau der Stadtbahn in
Berlin, Am Zwirngraben (Source: Landesdenkmalamt Berlin) 101
Figure 4-7 The development of the *Stadtbahn* railway line in the neighboring city of Charlottenburg
(Source: Gottwaldt, Handke, 1998). 102
Figure 4-8 The production of urban space in Berlin *Stadtbahn* space between 1882 – 1910: The uses of
the viaduct arches (drawing by the author). 116
Figure 4-9 Initial uses of the arches (Source: Gottwaldt / Handke, 1998).....117
Figure 4-10 The *Stadtbahn* arches and the main market hall (Sources: Gottwaldt / Handke, 1998). 118
Figure 4-11 The arches in use at Bellevue station (Source: Gottwaldt / Handke , 1998).....118
Figure 4-12 Arches in use at the *Dirksenstrasse* (Source: Boberg / Fichter / Gillen, 1986).....118
Figure 4-13 Arches for the trade of fish and soap in 1930 (Source: Boberg / Fichter / Gillen, 1986).....119
Figure 4-14 The urban land of Berlin and the railway network in 1846-1896. (Source: Schmidt/ Eilhardt,
1994)....120
Figure 4-15 (following pages) The development of the *S-Bahn* network from 1945 to 1989 (Source:
Cabrini, in: Alfaro, 2007).....123

Figure 4-16 The production of urban space in Berlin *Stadtbahn* space between 1975 – 1985: The uses of the viaduct arches (drawing by the author). 139
Figure 4-17 Uses in the arches during the boycott. (Source: Boberg / Fichter / Gillen , 1986).....140
Figure 4-18 Uses in the arches during the boycott (Source: Binger in: Die Berliner *S-Bahn*, 1984) 141
Figure 4-19 The station Alexander Platz in the East Berlin 1984. (Sources: Cabrini, in: Alfaro d´Alençon 2007).....141
Figure 4-20 The stations in West Berlin 1983. (Sources: Cabrini, in: Alfaro d´Alençon 2007). 142
Figure 4-21 Train lines in East and West Berlin and the new housing settlements. (Source: Cabrini, in: Alfaro d´Alençon 2007). 143
Figure 4-22 The different urban dynamics around the *Stadtbahn* in Berlin (West) and Berlin (East) in 1960 (Source: Cabrini, in: Alfaro d´Alençon 2007).....144
Figure 4-23 Train lines in West Berlin and the new housing settlements. (Source: Alfaro d´Alençon 2007, drawing Cabrini). 145
Figure 4-24 Train lines in East Berlin and the new housing settlements. (Source: Alfaro d´Alençon 2007, drawing Cabrini). 146
Figure 4-25 Public transportation network in the divided city. (Source: Cabrini in: Alfaro d´Alençon 2007). 147
Figure 4-26 The *Pilzkonzept* (Source: Kuhlmann, 2006). 154
Figure 4-27 Objective Image Planwerk Innenstadt May 18th 1999 (Source: Senatsbauverwaltung für Stadtentwicklung Berlin) 159
Figure 4-28 (following pages) foldout image, table viaduct: Survey on transportation, urban and commercial development of Viaduct and arches 2007 - 2009 (Sources: Alfaro d´Alençon (2009) 175
Figure 4-29 (following pages) fold-out image, Table stations Survey on transportation, urban and commercial development of the Stadtbahn train stations 2007 - 2009 (Sources: Alfaro d´Alençon 2009) 175
Figure 4-30 The daily movement defined by the mobility diary for different urban dwellers in Berlin (Source: Annex, Alfaro d´Alençon 2009). 180
Figure 4-31 The main areas of daily movement for the two survey localitions in Berlin (Source: Annex, Alfaro d´Alençon 2009). 181
Figure 4-32 Circulation diagrams for different urban dwellers in Berlin (Source: Annex, Alfaro d´Alençon 2009).....182
Figure 4-33 The urban dwellers' perception of of the Stadtbahn Viaducts and Arches (Source: Alfaro d´Alençon 2009, drawing Bauerfeind). 187
Figure 4-34 The urban dwellers' perception of of the Stadtbahn Stations (Source: Alfaro d´Alençon 2009, drawing Bauerfeind).....188
Figure 4-35 The production of urban space in Berlin *Stadtbahn* space between 2007 – 2009: The uses of the viaduct arches (drawing by the author). 203
Figure 4-36 Images of the station square (Sources: Alfaro d´Alençon 2009). 204
Figure 5-1 Uses of the station by people entering and leaving the station on different days (Sources: Alfaro d´Alençon 2009).....230
Figure 5-2 Transportation and commercial development in the station Hauptbahnhof (Sources: Alfaro d´Alençon 2009).....233
Figure 5-3 Stadtbahn Hauptbahnhof Area Micro-survey.....237
Figure 5-4 density decline around Savignyplatz station, (Sources: Alfaro d´Alençon 2009).....239
Figure 5-5 Retail structure at Savignyplatz, (Sources: Alfaro d´Alençon 2009).....239

Figure 5-6 The functional layout of the station and its surroundings. (Sources: Alfaro d´Alençon 2006)...243
Figure 5-7 Images used for the interview on the urban dwellers' perception of Savignyplatz (Sources: Alfaro d´Alençon 2009)....244
Figure 5-8 Savignyplatz Area Micro-survey 248
Figure 5-9 The functional layout of the station and its surroundings. (Sources: Alfaro d´Alençon 2006)...250
Figure 5-10 Jannowitzbrücke Area Micro-survey....259

TABLES

Table 2-1 Table showing the relationship in causes and effects between transport action and land-use planning. (Source: Blana, 2003) 32
Table 2-2 Comparison of uses in three new train station projects: Utrecht, King's Cross Regeneration and King's Cross Lands Group. Sources: Bertolini (1996), own elaboration....57
Table 3-1 Table showing the analytic framework for the research on the hybridization process....85
Table 3-2 Table showing the analytic framework for the research on the specif area and its social spatial qualities 87
Table 4-1 The production of urban space in Berlin *Stadtbahn* space between 1882 and 1910: its planning, hybridization, specific development patterns of the transportation network, urban development related to the railway elements (viaduct and stations) 121
Table 4-2 The production of urban space in Berlin *Stadtbahn* space between 1963 and 1985: its planning, hybridization, specific development patterns of the transportation network, urban development related to the railway elements (viaduct and stations) 148
Table 4-3 Survey: Viaduct Stadtbahn and Stadtbahn Station transportation space development 2005 - 2009....205
Table 4-4 Table showing changes of uses in the three different research phase 215
Table 4-5 Synthesis Table, summerizing the three research phases....217
Table 5-1 Research on fragmented space and urban qualities: Hauptbahnhof area 237
Table 5-2 Research on fragmented space and urban qualities: Savignyplatz Area 248
Table 5-3 Research on fragmented space and urban qualities: Jannowitzbrücke Area 259

1 INTRODUCTION

Through historical research and contemporary empirical analyses of the Stadtbahn railway viaduct and its arches, transportation network development, urban dwellers' practices and associated commercial activities, the research reveals the urbanization of the railway infrastructure and its role in the production of urban space in Berlin.

In several major European and North American cities, railway spaces have recently again become focuses of emerging urban developments. Since the late 1990s, railway space, including the stations and lines, has been the subject of massive changes and increasing numbers of radical redevelopment strategies in Berlin and other main cities in Germany, as well as in international cases like *Grand Central Station* and the *Highline* in New York City, or the viaduct *Promenade Plantée* in Paris.

Urban regeneration strategies such as the '*Planwerk Innenstadt*' in Berlin, a proposal formulated along '*Urban Renaissance*' guidelines, have focused on inner-city areas and reevaluated the railway space for redevelopment. The railway space was constructed during the course of the nineteenth century in the then-periphery of the city center and is surrounded today by areas experiencing redevelopment and increases in density. Meanwhile, specific railway redevelopment plans present two aims. One intention is to serve the expected increased demand for transportation integration as *intermodality* in concentrated network hubs in renovated stations. The second aim, from the urban development perspective, is to 'properly' integrate the increased flows of mobility in the city area, thereby 'creating' urban space of higher quality.

In addition to Berlin, other European cities have also developed trendsetting '*Flagship Projects'*, with the intention of catalyzing the transformation a whole neighborhood or district by redeveloping a station or railway line. In these cases, the transportation infrastructure is converted and extended to serve commercial, recreational and other uses. In its nineteenth century glory days, railway space meant radical spatial enlargement through networks. Simultaneously new spatial configurations developed at specific points—around stations and station squares and in the neighboring areas known as the *Bahnhofsviertel*. Today, in ambitious redevelopment strategies or in participative urban regeneration projects, the prime task of railway space is 'place-

making'. It is expected to 'intensify' metropolitan areas as part of the polycentric geography of emerging urban development.

Against this background, the railway space in Berlin's inner city is currently being extensively restructured in terms of transportation network design and management structure, urban space development aspects and associated commercial activities. The restructuring process encompasses far more than a functional extension of the network or a change in building design and aesthetics. In the early 1990s, the Deutsche Bahn AG, national and local authorities, engineers, planners and architects embarked on a fundamental social-spatial redefinition of the railway space, as defined in the *'Renaissance of the Railway Stations'* planning guidelines. Following this, developers such as the Deutsche Bahn AG defined the railway space with new concepts like the new station, a corporate design that encouraged an environment 'of closed experience' designed to adequately meet every customer's need beyond transportation-related activities (Steguweit 1997).

Research relevance: The social-spatial meaning of urban railway space development and its redevelopment strategies

In this context, numerous railway space redevelopments—especially strategies focusing on the station—are the subject of controversial discussions among scholars from the fields of urban research, planning and architecture, as well as among the public voices of the cities affected by the emerging developments. In these debates there are two positions. The first calls for the replacement of single-sector based approaches with the incorporation of multi-actor methods in the planning and realization of railway redevelopments. In contrast, the second position promotes privatized structures of transportation provision, whereby the railway space management focuses on profitable outcomes generated by public transportation supply and imperative solutions based on functional and commercial approaches to the transportation space.

In spite of the polarities and contradictions in emerging railway space development, research has only rarely conceptualized the meanings and prospects of today's railway spaces, their emerging processes, dynamics and social-spatial development potentials. Instead, it seeks to explain the social-spatial dimensions of urban transportation areas by focusing on new transportation projects. Significantly, less research addresses the social-spatial conflicts related to restructuring railway space and its consequences.

However, the historical perspective reveals that railway space has always been strongly related to social dynamics, as can be witnessed in ambiguous transportation-commercial physical configurations such as the 'front' side of the station with its monumental architecture and square and its marginalized, derelict 'rear'. Furthermore, railway space has had a direct influence on the socially segregated development of the city. Moreover, the recent 'hub' development is shaping the social space of the contemporary inner city with its specific transportation-commercial physical typologies as enclosed 'integrated' consumption areas.

Research undertaken to explain the specific patterns of railway space redevelopment and its social physical impact (e.g. Bertolini 1996; Peters 2009; Wucherpfennig 2006) remains focused on station development. Relatively little attention has been paid, in terms of academic research, scholars dialog and research on social-spatial development process, to the development of the station squares as the traditional point of interchange between the railway and the city (Bodenschatz 2009) or the viaduct lines and arches interacting with their urban surroundings.

This also applies to Berlin's *Stadtbahn* railway line, a part of the rapid transit S-Bahn network. It is elevated on a viaduct with a range of arches and runs on an east-west axis right through the middle of Berlin's urban space. The few studies that emphasize the railway line and its arches were based on railway-engineering development and date until 1984. However, this time represented the lowest point of activities in the *Stadtbahn's* history. During the Cold War, both the transportation function and the use of the viaduct arches were massively affected by the general boycott in West Berlin of the GDR-run transportation infrastructure. Despite the railway line's long physical dimension and its imposing form, which could be associated with the *barrier effects* common to freeways, the *Stadtbahn's* building process has been devoid of any clear concepts or precedents and it has not been compared to national or international case studies. The apparent underestimation of the viaduct and its arches reveals the lacking consideration of urban transportation space beyond its stations, and transportation and commercial aspects. The viaduct has not been viewed as an urbanization project with the potential to 'produce' space and interact with the urban space. However, the social-spatial potentials of urban railway lines have become the subjects of redevelopment projects in which the transportation line is regarded as a catalyst for the development potential of the adjacent areas even when the transportation facility and the stations have been removed (e.g. *Highline*/ New York, *Promenade Plantée*/ Paris).

This research focuses on the particular social-spatial configurations of the *Stadtbahn's* viaduct line and its arches and compares its developments with the patterns of its stations. It maintains an in-depth understanding of the railway space potentials to create specific social-spatial space patterns with the surrounding urban space. Therefore, this research is interested firstly in the approaches that affect the viaduct space and its arches as well as their interactions in terms of the social-spatial space development process. Secondly, it is also interested in the emerging variations, and the site-specific developments in the relationship between the viaduct line, its arches and Berlin's urban context.

Research approach and objectives

The general objective of this research is to complement and advance the existing research on urban railway space from a social-spatial perspective, in order to understand the underlying factors and mechanisms for the emergence and re-development of the railway space revealed by the viaduct space and its arches. In this regard, in line with social studies (Harvey 2005; Lefebvre 1991), urban railway space is conceptualized as social-spatial: it illustrates social life through its structures and processes, and fulfills more than its transportation functions.

The main research aim can be divided into two specific parts. Firstly the railway space—focusing on the viaduct and its arches—will be expounded, in terms of the socially influenced production of space and its appropriation patterns, in order to describe its historical social-spatial articulation. This will be followed by research on the current restructuring processes relating to the production of space in the viaduct and arches. In this context, the most significant influences on the social-spatial characteristics of the railway space are currently the plans of the *Deutsche Bahn AG* and inner city development projects, such as *'Planwerk Innenstadt'*. These planning strategies show a movement in urban development characterized by a high degree of location development strategy where place-specific characteristics carry a unique potential for economic development. They are becoming increasingly significant for the new marketing strategies of the post-industrial society.

An appropriate theoretical and conceptual framework provides the foundation for the achievement of these aims. Accordingly, the theoretical framework reveals individual concepts and approaches related to the development of urban transportation space. It highlights the transportation network planning and the management demand on the transportation system (Florian/Harpenau 1998; Depuis 2004; Kutter 2005) and reveals

social and planning concepts (Smets 2000; Marvin,Graham 2001; Bourdin 2002) related to transportation space developments. Discourses related to the development of urban space and concepts of 'place' conceptualize urban space's social-spatial dimensions and production patterns (Lefebvre 1991; de Certeau 1984; Appudarai 1998), design concepts (Angélil, Klingmann 2000; Koolhaas 1999) as well as its economic dynamics (Harvey 1989; Castells 2001). Conceptually, it is essential to understand the variety of spatial developments and appropriation patterns that derive from the interplay between different concepts and social contexts. Furthermore, the theoretical framework highlights both historical and current events that provide a better understanding of the dynamics and characteristics of the interplay (Gidieon 1976; Schievelbusch 1986; Bertolini 1996).

The following frameworks provide the conceptual model for the research and two key points for understanding Stadtbahn space development patterns.

Firstly, urban transportation space is associated with patterns of hybridization and their particular spatial organization. The spaces emerge from the mutual confrontation in conflicts and negotiations between the claims and needs of different interests in a given space (Smets 2004). In other words, the transportation project shapes its surrounding landscape with a footprint and vice versa, producing particular spatial typologies that are the result of the interaction of different interests. However, in the aforementioned research, the assumed hybridization has only been conceptualized as resulting from two elements: the transportation space planning and the specific urban context. Nevertheless, the revised conceptual framework aligned to archetypal railway developments (in the industrial age, Modern city and post-Fordist era) reveals the additional influence on the development by commercial activities. Therefore, the urban transportation space needs to be understood as an entity shaped by transportation space planning, the social context and associated commercial activities. These three elements influence the development and appropriation patterns of the railway space as specific social-spatial configurations.

Secondly, the station is identified as an ambiguous 'producer' of social-spatial configurations related to the transportation network as a 'node' and at the same time as a 'place' within the urban context. A wide range of actors, such as planners, transportation companies, developers, investors and users, build the space as diverse fragmentized conglomerations of uses and shapes, loosely related to adjacent areas (Bertolini 1996). This conceptual framework provides the initial hypothesis, that the

viaduct represents an associated transportation network and a specific urban context development process connected to commercial activities. Therefore, the specific qualities of the emerging spaces and their social-spatial appropriation patterns (Raumaneignungsmuster) need to be further understood.

Methodological considerations

Henri Lefebvre's theories (1991) and Michel de Certeau's studies (1984) on the 'production' of urban space are applied when researching the appropriation patterns of the viaduct and its arches, as well as the dynamics and variations of space development by urban dwellers. In this context *hybridiz*ed space is distinguished essentially as *appropriated* and *dominant space* (Lefebvre 1991) and as planning *strategies* and urban dwellers' everyday *tactics* (de Certeau 1984). Both approaches question the qualities of emerging social-spatial configurations and suggest that they are varied and nonuniform. *Dominant space* is by nature *dominated* and *strategically* designed by technological intention and political power and is inherently mono-functional and enclosed; *appropriated space* is diverse and *appropriated* by the everyday users' needs by everyday *tactics*. Lefebvre's and de Certeau's studies were conducted in late industrial cities of the 1970s and 1980s. Through globalization, new challenges have been made to the complex urban interaction space. New research in the urban studies field revises and echoes the fundamentals of Lefebvre's and de Certeau's work (e.g. Löw 2001; Appadurai 1998; Massey 1994). Furthermore, since this research assumes that 'locality' (Appadurai 1998:54) is not an isomorphic configuration in the globalized world, but rather as Lefebvre and de Certeau conceptualized, it illustrates a process and is based on social interactions, incorporating local to global levels. (Massey 1994) Therefore, current research calls for a comparison of generalized 'globalized' perceptions of urban space with specific local development patterns. It is the local urban dwellers' context, actions, and their relationship with the railway space that produces the *Stadtbahn* space and is in foreground of this research. The research method therefore derives from the *Aktionsraumforschung* (action space research), by Riege/Schubert (2005) that echoes

the fundamentals of Lefebvre's and de Certeau's work and which empirical research sources are founded on the relational social space theory.[1]

Research Structure

The research is aligned to three dimensions of the *Stadtbahn's* space development process:

The first dimension is planning, which includes the discourse on transportation and urban concepts and the associated commercial dynamics of the urban transportation space. It also reflects on the changing dynamics of transportation provision strategies, such as the move away from the historically public managed railway provision towards new *Public Private Partnership* structures (PPP) with the Deutsche Bahn AG.

The second dimension focuses on the emerging *Stadtbahn* space and is aligned to the reflections on urban space development, such as the hybridization of space through different approaches. It reveals the main conflicts and negotiations between different actors and users as well as the *Stadtbahn's* specific social-spatial configurations from a historical perspective. It also employs empirical studies to account for recent emerging space developments. The research concentrates on urban space development and spatial characteristics such as transportation performance, social-spatial development and commercial activities. It researches the immediate surroundings of the railway viaduct and its arches and contrasts the findings with the development trends seen in the stations and station squares. Thereby, in accordance with the initial hypothesis, it elaborates on the development of urban space in Berlin through the *Stadtbahn's* network activity.

The third research dimension discusses recent alternative viaduct developments. The dynamics of space production such as the particular appropriation pattern of space by individuals are examined, as is the emerging entrepreneurship at specific sites where clear space transformation strategies are evident. Therefore, an emphasis is placed on revealing variations of urban space production within the arches and examining their

[1] See Chapter 3. In the German context *Aktionsraumforschung* was developed by Riege/Schubert. The method is based on the work of Lefebvre, theories on the production of social space and the concept level as physical and mental representations of space. (Riege,Schubert 2005, in: Macher 2007:20-24)

urban and commercial implications, scenarios of social conflicts and the role the arches play. The research reflects on specific emerging spatial qualities and is related to discourses that conceptualize urban space and 'place' in their social-spatial dimension and production patterns as well as to related economic dynamics.

In fact, such an analysis becomes crucial in the context of social-spatial redefinition that relates to the changed social-spatial production of space in post-Fordist development and urban entrepreneurship, such as the specifics of 'place-making' and the strengthening of place-bound relations (Friedmann 2007). An increasing change of uses and appropriation patterns related to the arches indicates this process. Hereby the railway management has significantly shifted development from a network extension approach to specific train space development. Stations and arches near stations appear to have been strategically designed to meet a demand for service and consumption. On the other hand, the viaduct space is being redeveloped in urban projects and the arches are moving towards a uniform development with clear commercial uses. This development is accompanied by rising spatial segregation and gentrification employed to produce urban spaces for commercial reasons. This understanding becomes crucial when reflecting on what social-spatial configurations railway space redevelopment presents—in terms of transportation development, urban practices and commercial strategies in post-Fordist developments as well as the specifics of 'place-making´.

Learning from the Stadtbahn

The case of the *Stadtbahn* seems ideal for advancing the understanding of inner city railway space in terms of recent planning strategies and as a crucial site of recent urban development processes. The *Stadtbahn* is a particularly interesting example of transportation space (re)development because of the destruction, reconstruction and restructuring it has experienced. Today, as the case studies show, along with the station, the viaduct and its arches are, at the strategic center of the massive railway social spatial redefinition process and are intended to be transformed into multifunctional urban areas (Planwerk Innenstadt 1999). Therefore, the case provides fundamental knowledge on the chosen role for railway space redevelopment by planning initiatives today. In this context, the *Stadtbahn* became a source of conflict and the subject of debates on restructuring and social-spatial appropriation. Studying the *Stadtbahn* therefore reveals the workings of local dynamics as well as issues regarding the privatization of urban space through railway space redevelopment.

Certainly, the *Stadtbahn's* socio-spatial and historical development offers a rich context for gaining a deep understanding of the processes involved in the 'production of space´, and reveals significant shifts in transportation space developments in recent years.

The importance of the arches

Since the implementation of the *Stadtbahn* in Berlin, the viaduct and its arches have provided diverse social configurations and have been involved in urban conflicts that have been significant for its appearance beyond that of the orchestrated station square and its surroundings. Today, the diverse usages of its signature arch spaces still provide new emerging development strategies and different social-spatial spaces. The spectrum of appropriation patterns and spatial use ranges from long 'consolidated' appropriations of arch spaces by urban dwellers to temporal use by the urban subculture and creatives. These can be studied in terms of conflicts and negotiations as well as participation and power relations. This can enrich the research on urban transportation space in terms of hybridization, which is assumed to emerge from conflicts and negotiations but has only been studied referring to the new examples of transportation projects.

Limitations of research

Empirical studies conducted from 2006 to 2009 along *Aktionsraumforschung* guidelines have been limited to research on the development of 'space´ in terms of:

a. The research on the physical context of the given space by mapping methods

b. The relational space: the lived space defined by the use patterns in the area, the perceived space, the conceived space, defined as the relationships among actors (elaborated through counting and quantitative methods as well as questionnaires).

While this research focuses on urban dwellers and their 'production´ of urban space, it is limited to the social practices, emerging conflicts and social-spatial dimensions of the *Stadtbahn* space. In this research context, the terms 'interaction´ and 'isolation' (e.g. the railway lines potential to connect with the adjacent area or not) have been considered simultaneously with the physical form and the analysis of social patterns, such as those of actors and users, and perceptions of the infrastructure space.

Therefore architectonic design and emerging design trends in the *Stadtbahn's* viaduct, arches and stations—which result from planning proposals and social interactions—and their contribution to spatial 'interaction' remain as supplementary information. The focus is set on the relationship between the city dwellers and the infrastructure space, and the quality of this space in terms of interaction and particular spatial *production* patterns.

Furthermore there is an awareness of the symbolic dimension in the intense post-modern architecture debate that has also affected the normative planning theories of Berlin, such as*Planwerk Innenstadt* see Chapters 2.1.3 and 4.3.1 (Rossi, Krier 1987). In addition, the symbolic dimensions of infrastructure enable an understanding of the process of appropriation (Vesely 2004). However, this dimension has remained in the theoretical discourse, with the empirical research focused only on urban dwellers' perceptions. This is due to the main research goal of understanding specific forms of transportation space development through appropriation patterns from an operative level as well as through planning strategies and urban dwellers' practices towards 'urbanizing´ the infrastructure.

In order to understand the nature of the *Stadtbahn's* emerging railway space today, the research focus was set on transportation development, urban context and commercial dynamics. To establish if urban transportation space exists as a social-spatial transportation-commercial configuration—in which the transportation development is not only related to transportation supply but also strongly linked to commercial activities—the research focus was embedded in an interdisciplinary research frame. Empirically tested data related to commercial dynamics and supportive economic models was derived from a workshop addressing the economic impacts of inter-city connectivity on land price value in economic simulations of the *Stadtbahn* space (Ahlfeldt, Wendland 2009). Therefore, commercial data remains supplementary and supported by secondary literature.

While historical sources provide diverse views of the functional and technical realm of the *Stadtbahn* project's history, accounts of the social impacts experienced during the physical installation of the train system in the late 1870s and the subsequent dereliction of the inner city remain diffuse. Attempts to assess these impacts were made by studying documentation of the expropriation of city dwellers in the affected urban spaces, historical plan material of Berlin's inner-area and exhibition catalogues related to the *Stadtbahn* development. During the time of the city's division, literature related to

the *Stadtbahn* project was scarce, and documents about the viaduct were fragmented and difficult to reassemble. The uses of the arches could be indetified through the viaduct register obtained from the Deutsche Bahn AG / DB Immobilien AG.

Structure of the Thesis

Chapter 2 highlights firstly the individual approaches that affect the urban transportation space and secondly their practical interplay in two theoretical discourses. The first discourse reveals the antagonistic relationship and competing concepts between transportation and urban planning and discourses on economic dynamics as well as concepts on 'place'. While discourses on transportation provision are focused on transportation networks' operational modes, urban studies criticize the sectorial development of transportation areas in the urban space and account for the resulting integration problems (Section 2.1). The second discourse highlights the understanding of the co-relational development between the transportation space design and the urban context (the industrial city, modern city and postmodern society are examined) revealing its practical modus operandi. This chapter is rooted primarily in the revision of European literature with a focus on the German context (Section 2.2). The last section of the chapter provides the conceptual framework for the study by a conceptual positioning through the theoretical framework. A shortcoming in the discussion is identified as the poor understanding of the railway space outside its functional role as a transportation provider and from the station and its technical and economical developments. Further to explain the potentials and dynamics of the space that can develop around transport infrastructure in an urban context. Therefore, the thesis proposal is to study the appropriation patterns of the Stadtbahn space and its variations as specific space developments from a social perspective, assuming hybridization among the three elements: the transportation space planning, the urban context and associated commercial activities. The study is based specifically in the railway infrastructure with its various elements (primarily the viaduct line and secondarily the nodes or stations) and their potentials for producing space (Section 2.3).

Chapter 3 introduces the methods and research structure of this thesis. It highlights the research on 'space´ and Lefebvre's and de Certeau's fundamental concepts. This chapter also considers the structure of field research and introduces the employed research procedure—Aktionsraumforschung by Riege, Schubert. It discusses particularities of the case study research for the research proposal and reflects on the potential for case study comparisons to ground the hypothesis of the work.

Chapter 4 presents the first research phase, concentrating on the aspect of the hybridization of the Stadtbahn space. Along with the analyses of the Stadtbahn planning, it shows the conflicts encountered while implementing the plans into the urban context of the metropolis, as well as the ways urban dwellers in Berlin have produced urban space by appropriating the Stadtbahn viaduct, its arches as well as its stations and developed the network. With the three dimensions of planning, implementation and spatial production, the research looked into the pioneer stages of the Stadtbahn in Berlin, as well as its transformations during the division of the city and its emerging restructuring under the planning proposal of 'The Renaissance of the Railway Station´. The synthesis in Chapter 4 shows specific patterns of appropriations of the Stadtbahn space by urban dwellers. It accounts for specific changes seen in the three research phases before finally introducing a shifting process between strategic space-making and specific local appropriation patterns in the Stadtbahn space.

Chapter 5 presents the second research phase—in-depth micro research on the qualities of emerging viaduct spaces in terms of the three aspects of transportation network performance, urban context and commercial activities. The research elaborates on local space production in the transportation space as 'place-making' and illustrates the diverse appropriation patterns presented by three different viaduct settings. These appear as: current conflicts between long-term appropriations in iconic viaduct settings and evictions by transportation developers; uses as festival space and viaduct destruction for 'integrated' consumption and transportation space configurations; temporary arch uses and creative outdoor subculture activities in Berlin's urban space.

Chapter 6 reflects on the primary findings of this work in order to understand the railway space urbanization through appropriation patterns and how the three elements—transportation space development, urban context and associated commercial activities—are influencing this development. Based on these reflections, conclusions are drawn on the understanding of specific forms of transportation space developments as social-spatial transportation-commercial configurations. It also traces these findings back to the current discourse on the transportation supply and its mode of development, and to patterns of space production and the influences of commercial strategies on the emerging development process.

2 THEORETICAL FRAMEWORK OF URBAN TRANSPORTATION SPACE

The third section deals with the conceptual positioning to explain the potentials and dynamics of the space that can develop around transport infrastructure in an urban context. This allows the conceptual framework for the following research work on the Stadtbahn to be established. This is based on the urban transportation infrastructure development patterns in general, and specifically the railway infrastructure with its various elements (primarily the viaduct line and secondarily the nodes or stations) and their potentials for producing space. (Section 2.3)

2.1 Theoretical framework: Between network and place

Due to the rapid growth of environmental problems in the 1970s and derelict urban areas, urban transportation space has been under new pressure and demands for three decades. An increase in mobility scenarios, primarily in car use with public transportation still being the second choice, allied to the general acceptance that passenger (and freight) mobility is a key factor forecast for the future economic development of Europe, led planners to reevaluate their viewpoints on transportation development.[2]

> *„ Angesichts der zunehmenden Globalisierung der Wirtschaft wird die "nachhaltige" auf lange Sicht gesicherte Mobilität von Personen und Gütern als ein entscheidender Standtortfaktor im weltweiten Wettbewerb der Wirtschaftsregionen gewertet. Verkehr und Mobilität gelten nicht nur als zentrale Wirtschaftsfaktoren und Wachstumsträger, sie sind zugleich auch eine wesentliche Vorraussetzung für die soziale und kulturelle Entwicklungsfähigkeit moderner Gesellschaften. […] Folgt man den neuesten Prognosen, so ist auch in Zukunft mit einer ungebrochenen und dynamischen steigenden Verkehrsnachfrage zu rechnen."* (Florian 1998:1)

> *("In light of an increasingly global economy, 'sustainability´ will be evaluated in the long term based on the ensured mobility of goods and individuals as a decisive factor of worldwide competition among economic regions. Not only are transportation and mobility considered central economic factors and means for growth, they are likewise the fundamental preconditions for the social and cultural developmental potential of modern societies. [...] Following these most recent prognoses, it is expected that transportation demand will continue to increase in an uninterrupted and dynamic pattern for the foreseeable future")*

Therefore, the challenges facing the urban transportation space are moving beyond the transportation planning circles into the planning concepts for urban development in Europe and are an emergent topic on the political agenda for a sustainable European city.[3] However, polarities are characteristic of the discussion on the development of urban transportation spaces. For example between the values of mobility for the development of the society versus a concern for the notion of place and liveable urban areas for all inhabitants or the short distance concepts in the development of urban areas versus the personal profit of extended trade and supply market opportunity due to transportation networks.

---

[2] Passenger mobility in Europe and other urban areas worldwide is still studied with the general focus on car use. In the European Community 80% of all passenger transportation is still undertaken with the individual car, producing 75% of total CO2 emissions. Florian (1998), p. 67

[3] Ascher (2004), pp. 32-38 and see in this context for detailed outline the proposal of the Leipziger Charta (2008)

2.1.1 The transportation discourse

In this context of new demand, German transportation planning circles (e.g. Florian 1998; Harpenau 1998; Kutter 2005) as well as a European Transport Common Policy (e.g. the European Commission – Directorate General for Transport 1994) argue for a new positioning towards the management considerations of infrastructure supply as an 'integrated´ service for the society in new planning proposals.

A re-evaluation of network planning: from 'Predict and Provide' to 'Cause and Effect Chain'

With a view towards an 'integrated service´, scholars (e.g. Florian 1998; Kutter 2005) argue that transportation planning methods need to be reformulated because the focus of the 1950s and 1960s on the efficient development of the transportation network with the need for *Überwindungsleistung* (efficiency of transition)[4] is a demand that has changed. While this focus was particularly relevant in times of emerging growth in individual car use and the rapid extension of networks, today transportation networks have achieved a sufficient level of coverage in Germany. The planning focus is therefore no longer on the broadest and most rapid expansions.

For a suitable development, methodological problems deriving from the decreasing complexity achieved through mathematical network analysis (derived from graph-based theories) and encountered while aiming to provide transportation based on *Systemorientierung* (system-oriented approach) need to be overcome.[5] In this applied method, the specific network structure derives, firstly, from various elements set in correlation to their performance capacity, and secondly, from demand on the system.[6]

---

[4] Florian (1998) in Florian/Harpenau (1998), p.5; Based on the single transportation mode (cars in particular) efficiency was measured by the system's potential to frequent areas. See also Tomazinis (1976), p. 24. Network efficiency is said to be the facilitation of fast travel offered in the area that it is expected to serve.

[5] The transportation demand and service is simulated in rational planning models as a methodological basis. Therefore in graph analyses, elements are set in relation to one another as physical elements that provide a service, displaying circulation and modes of regulation, financial schemes, schedules and long-term investment programs as well as designs for traffic control and information systems to analyze mobility demand within a given area

[6] The study of networks has gained interest in numerous disciplines beyond the transportation planning and the natural sciences, for example in the social sciences, as a means of analyzing complex relational data. Emerging from the area of applied mathematics, networks based upon graph theories offer a multitude of different outlines depending on the relational data studied. Its basic logic implies an abstract representation of a set of objects interconnected by links. Typically, a graph is depicted in diagrammatic form as a set of dots depicting vertices, joined by lines or curves for

The system approach isolates those elements that are most relevant for system analysis based on a theoretical analysis approach (Tomazinis, 1975: 24). The remaining elements are accounted as externalities belonging to the external environment. Thus, many elements are defined as having a resulting implication for the economy, the location and change of activities in a given area, the environment, quality of life and social cohesion.

> *"Given these conditions, how are we to ensure that all structures (elements) have been provided for? […] These are, in fact "internally" complex systems, made up of many elements influencing each other both directly and indirectly […] with many feedback cycles. The discipline's theoretical foundation is, in my opinion, a 'topological behavior paradigm´, consisting of a set of assumptions and a limited number of functional relationships. In an abstract way this paradigm represents the transportation service and its performance (supply model), the travel demand and the behavior of system users (demand model) as well as their intersections (demand/supply interaction model)." (Cascetta 2001: 9)*

Due to the impossibility in accounting for every interacting element when solving an infrastructure problem, systems have been evaluated in a reactively quantitative method. Network capacities have been strengthened to solve the theoretical simulation approach. Blana indicates that this planning method, with its methodological limitations and forecast possibilities, has been the reason that the system planning has taken a 'Predict and Provide´ approach in the past.[7] Once installed, transportation networks remains very inflexible to changes in the demand and functionality that may appear. To overcome insufficient planning possibilities scholars envision incorporating agents and their performance in a *'Cause and Effect Chain´* for the proper development of the transportation network. Transportation needs have to be incorporated since transportation planning and mobility ultimately carry the functional responsibility of providing for economic progress and social demand. In sum, the significance of the changed positioning towards planning serves as a rejection of the *'Predict and Provide´* position is that the broadest and most rapid expansion of transportation network areas belongs to the past. These key statements are the basis for currents definitions such as *´integrative transportation planning´* in transportation planning circles.

---

edges. Most of the definitions and concepts are explained through this graphical representation. Network theories remain conceptual models for—among other areas—general planning, economic analysis and transportation planning.

[7] Blana (2003), p. 18, the term predict and provide refers to the methodological limitations of the planning methodology. With an imprecise selection of elements its forecasted result remains relative.

Towards integrated transportation networks

A consequence of the changed perception of the transportation supply is that transportation planning is focused more on demand management and less on the development of infrastructure. In planning circles, a major issue is to provide a sustainable transportation development that 'keeps the balance´ between supply and demand. Nevertheless, prevailing theories still focus on the transportation network, while calling for cross-linked networks -the target is to design efficient transportation service from a 'starting-point-destination´ based approach. This method aims to calculate the complete trip incorporating combinations of single journeys on one or more modes of transport. The 'integrative´ mobility planning takes into account system correlations with other transport modes within the production chain. Key elements in the provision for integrative systems are modal integration within public transportation networks, the aspect of service and users and the sector integration in planning through multidisciplinary working groups.

Modal integration and the 'hub' approach

Concepts from the 1950s and 1960s made a distinction between urban, regional and trans-regional transportation. Most outlying transportation in rural areas was conceived as a link to major urban centres. New concepts are arising in Germany and Europe for traffic junctions and interconnections between urban and regional areas in 'hubs' and zones of interchange. Transportation hubs are expected to serve the interconnectivity between people and commodities between important areas of business and trade. These nodes, especially according to European literature (e.g. Asher (2004)), meet the needs of peri-urban areas or high commercial and residential activities such as the transport orientated development of agglomeration (TOD).[8] However, hubs have also

[8] In the Literature review (e.g. Asher 2004; Depuis 2004), the development of the hub is associated with the TOD (Transit Orientated Development). TOD defines mixed-use locations within a radius of 400 to 800 m (considered to be an appropriate scale for pedestrians) from a transit stop. The mixed uses cover residential or commercial areas designed to maximize access to public transport and often incorporates features to encourage transit use. A 'TOD' neighbourhood contains a centre with a station (such as train, subway, tram stop, or bus stop) surrounded by high-density development and progressively lower-density development spreading outwards from the centre. Many new towns created after World War II in the U.S., Japan, Sweden, and France and new towns in the Netherlands or Denmark hold characteristics of TOD development. TODs are a less developed phenomenon in Germany's urban space and greater cities and because the case study is situated in Berlin, the development of the TOD is not explored in much detail in this work.

been a guiding principle for railway system and station refurbishment in Germany in dense urban areas, such as Hamburg or Berlin.

Florian[9] discusses how the formal division of transportation modes in a uni-modal pattern (only street, rail, water or air) could be overcome to strengthen the network capacity for efficient transit orientated development with mixed modes. A common proposal is the replacement (or at least reduction) of one mode—individual automobile traffic—with another—public transportation—providing for optimized, environmentally sound mobility. Since individual car use still prevails in the urban landscape and its demand is forecast to generally remain high, new concepts are emerging to combine individual car use and mass transportation into one optimized system. The objective is to regulate excessive individual car use, the source of high pollution rates, by integrating it with mass transportation modes with higher efficiency rates and predetermined routes. Mixed-use plans in inter-modality[10] patterns outline strategic approaches for upgrading passenger modes such as *Park & Ride* and *Bike & Ride* services.[11] The target of the inter-modal approach is described as a systematic inter-linkage to the final (predetermined or to be defined) destination of several different transportation methods and/or providers of transportation services, in an effort to reach the overall goal of an economically and ecologically optimized transportation provision. In this context, urban transportation is a more complex network than the highways and train lines that connect cities or settlements outside of urban areas.

Since recent approaches to mobility have tried to interconnect different modes of transportation with a high amount of travellers (each of them on a particular route), customer analyses have become increasingly important. The detailed information available has resulted in better and more efficient transportation provision, which goes

---

[9] See for details Florian (1998) in: Florian/Harpenau (1998), p.5

[10] Florian (1998) in: Florian/Harpenau (1998), p.10. The term of intermodality in the context of the provision of an optimized combination of freight and passenger transportation is basically understood to increase efficiency in transportation systems. The concept was also interlinked to the single approach on passenger transportation. Since the end of the 1990s, the topic has become a key factor under scholars in the field of transportation planning and engineering. The European Centre for Transportation and Logistics (ECTL) based at the Technical University of Hamburg-Harburg launched a European-wide initiative called “Interact”. Its agenda stresses the proposal to optimize aspects of intermodality for the transportation provision of freight and passenger based mobility. The main areas are seen as the analysis of infrastructure networks, their logistical distribution and possible implementation strategies.

[11] See for details Jahnke (1998) in: Florian/Harpenau (1998), p. 215

further towards meeting the needs of the population. In planning circles a great demand for integrative transportation planning is expected to arise, resulting from the development of mixed mass and individual services. This requires that the network structure can react flexibly, identifying high demand commuter corridors and providing individual door-to-door services (Florian 1998, in: Florian, Harpenau 1998:81)

The role of the railway for 'sustainable´ transportation development

The significant changes in transportation demand and the call for the development of integrated transportation development have resulted in a transitional period for the rail transportation service and its management structure since the late 1990s (Florian 1998 in Florian, Harpenau, 1998:65). Once the only source of transportation capable of moving goods, and later people, across great distances in short times, the railway service was seminal to industrial development and a primary transportation issue. Today, with the introduction of the subway, buses and trams, equally effective means of transportation have emerged. In addition, the costs of private automobile transportation are largely borne by the users themselves, while the funding of railway systems with their infrastructure maintenance and management costs is not guaranteed (Kirchhoff 2004 in: Stein 2004:38).

Thus, in light of the competition and the higher running costs compared to other modes of transportation, the question arises about which services the railway can provide. In Germany, a dense train network has covered the country since industrialization. In the context of integrated planning initiatives and modal integration approach, the rail-service serves as a mode of public transportation, conceived to become an integrative network for incorporating other modes of public transportation and individual cars. Together these different modes should create a collective multimodal public transportation network and service.

In Berlin, a significant extension of the train network was not considered as part of the new development.[12] In the planning proposal (e.g. *Pilzkonzept*) for Berlin preference

[12] During the post-war period in both East and West Germany the main focus of the Reichsbahn and Bundesbahn was to provide a blanket coverage of railway tracks. Since the mid 1990s this has not been a priority of the Deutsche Bahn AG. In his dissertation on the 'Privatization of the Deutsche Bahn' (2006) Engartner lists the following figures: in Germany 455 routes have been decommissioned and the railway track network has been reduced from 42,800 km to 34,200 km since the beginning of the reforms. It is now the same length as the West German network was in 1952.

was given to the development of networks with concentrated nodes (stations), incorporating patterns of interconnectivity between regional, national and urban traffic from railway, subway and bus as well as tram traffic. Additionally, the ´hub´ should feature a zone for interchange between individual cars and the public transportation system (*Park & Ride*). This planning trend brought about a significant restructuring of the train system and stations in Germany and Berlin and was developed, within the framework of planning cooperation *Projekte 21*, between the railway management enterprise (the *Deutsche Bahn AG*), the state and planners. The initiative was understood as a revitalization and upgrading of the network, focusing on the stations (especially of inner-city stations) with the motto '*Renaissance of Railway Station*'.

The organizational and legal building blocks for a *'Renaissance of Railway Station'* were laid in Germany with the privatization of the rail service train networks. This was accompanied by the founding of the *Deutsche Bahn AG*, which arose from the fusion of the East German *Reichsbahn* and the West German *Bundesbahn* (see *'Bahnreform'*[13]), and has been on a privatization path since 1994. Aided by the newly awakened interest in Germany, Berlin, with its particular transportation planning situation, with features such as the rupture to railway services during the time of city's division, made its railway system a high priority.

[13] The discussion about the development of the railway reform in the context of the initiative 'Renaissance of the Railway Station' has been of interest to several authors. See in this context the exhibition publication 'Renaissance of the Railway Station' (1997) In order to explain the reform this publication merely described the reform's development process. On the one hand the impulse for the reform came from ecologically oriented transport politics, which had discovered the potential of the railway as a means of public transport that could be used to counter individual car use from a 'European integrated perspective'. On the other, was the economically critical condition of the former East and West German railway companies and the need to need to redevelopment of the railway network. In the course of the reforms there was firstly a fusion of the Reichsbahn and the Bundesbahn ((§ 1 des Deutsche Bahn Gründungsgesetz - DBGrG- vom 27.12.1993, BGBl I S. 2386). During the second stage new development targets were set within the European market (EU-Guideline 91/440/EWG on the development of an EU railway company EU/29. July 1991). The center of the reform was a several stage (partial) privatization of the railway by transforming the state enterprise into a public limited company (§ 2 Abs. 1 DBGrG)—the Deutsche Bahn Aktiengesellschaft (DB AG) and its subclusters . The aims of the company were stated as follows: a) economically independent management of the railways (formal privatization). b) Separation of the areas of transport infrastructure and operations as transport service provider. c) open up the formerly national network infrastructure to the EU. d) Develop the enterprise in line with market and profit oriented trading company principles. Sources : http://www.bev.bund.de/bahnreform.htm (accesed 28th October 2009)

The relationship between 'space' and transportation planning

Consequently, in transportation planning circles the term 'transportation space´ has become a highly differentiated term. Space is no longer seen as the homogenized basis for the expansion of transportation networks (Blana 2003:44). Rather, it is an entity to be customized in consideration of demand management and transportation networks according to the specific needs of the transportation users.

'Land-Use Transport Feedback Cycle' - theory

Nevertheless, besides the focus on the transportation space through its transportation supply and demand, an awareness of the interdependent nature of the positioning of the transportation networks and the development of the adjacent area exist in transportation planning circles. Theories such as the *'Land-Use Transport Feedback Cycle´* recognize a reciprocal interdependent nature emerging between the positioning of transportation networks and the locations for everyday activities (Blana 2003:45). This theory tries to explain the key correlation between transportation systems and urban planning through the positioning of activities (e.g. everyday activities such as living, working, shopping, education, leisure).

The ways in which activities are positioned in the urban space creates a demand on the transportation system to overcome the spatial distance between them. Therefore, the access to the network and the way activities are positioned to the network creates specific transportation patterns and urban development as explained by following key aspects:

- The spatial distribution of activities demands spatial interaction or journeys within the transportation system in order to surmount the distance between the locations where the activities take place.
- The distribution of the infrastructure within the transportation system allows the interaction and can be described as accessibility
- Easier accessibility increases the desirability of a location for all types of use and is therefore vital for new urban development

The dependence on land use and the development of the transportation network is addressed in this theory, although the transportation area also remains a subject to be revised only from the point of view of transportation supply. Therefore the development

of an area can be ensured solely by a suitable transportation network and the fulfilment of the transportation demand of its inhabitants. This theory also highlights that the accessibility of certain desirable locations is a critical criterion for individual and commercial economic development, as the following assumption explains.

´Mobility means prosperity' – The advantage of mobility

> *"At the same time, of course, it [mobility] represents dynamics, progress, growth and development." (Echenique 2001:23)*

In the relationship between wealth and mobility, patterns of increased disparity between high-income groups with high mobility rates and low-income groups with lower rates of mobility can be identified (Echenique 2001:30). Alongside the increase of mobility, the length of personal travel has also changed. Companies extend their market areas for goods, services and labour supply, and by travelling farther, households have access to better quality and cheaper prices. Markets with greater competition amongst suppliers must price their products more competitively allowing customers to choose among the best offers.[14] However, these concepts do not explain the notion that high rates of mobility are rather the natural consequences of already developed nations with their existent access to economic networks. Following this logic, theoretically, people with less access to economic networks could increase their income simply by altering their mobility rate. In addition, other studies also explain that the spatial distribution of activities leads to the transportation of goods and people. This insight is the basis for traffic analyses and traffic forecasts. From this basis, it becomes clear that suburbanization in cities is accompanied by an increasing spatial separation between home and workplace and, therefore, an increasing demand for mobility.

While these assumptions on the relationship between increased mobility development and space development remain speculative, transportation approaches focusing on capacity in relation to the notion of *'transit'* and *'access'* through the city often seek explanations through considering the importance of morphological expression and its configuration in urban surroundings—issues like the urban integration of mobility and

[14] Industrial nations such as the USA and Europe make an average of 700 to 4500 trips per year /1000 inhabitants while Sub-Saharan Africa are half as mobile as the first group with an average of 200 to 500 trips per year /1000 inhabitants. (Sources: Echenique 2001:29-37)

localized strategies of flows. The inclusion of such urban-spatial configuration criteria and the impact of urban transportation infrastructure systems on affected urban areas remain unexplored.

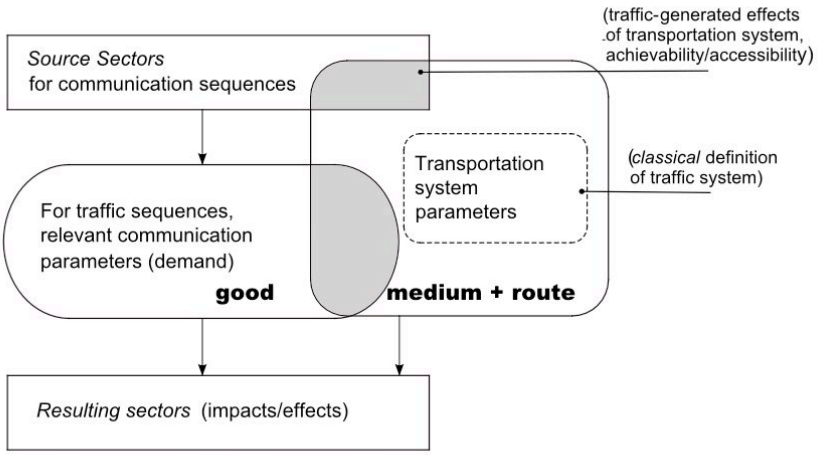


Figure 2-1 Diagram of integrated transportation planning model. (Source: Kutter 2005)

The figure shows an expanded planning proposal form the 'classical definition of transportation planning´, based on only the parameters of resources and routes. Towards efficiency in planning appear introducing cause and effect chains as for traffic sequences relevant communication parameters (demand) and traffic-generated effects of transportation system. In the resulting sector as shown more elements remain considerate (impacts/effects).

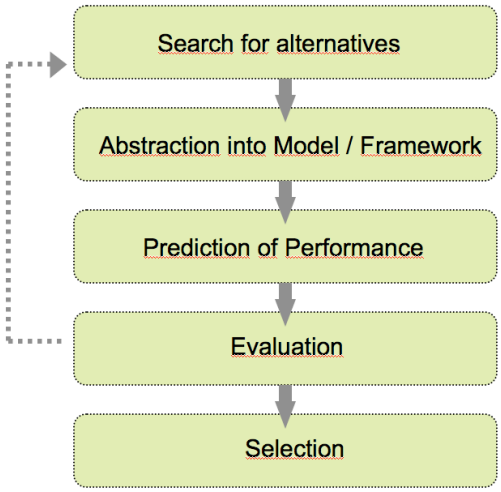


Figure 2-2 Diagram for a rational planning model: through the definition of elements. (Source: Luzi 2001)

Defined elements (objectives or specific conditions) are set into correlational abstractions such as network structures and named initial performance. The results of the model identify problems and provide evaluations. These results are fed into a new loop, producing alternatives to the first research results and strengthening the evaluation of the system.

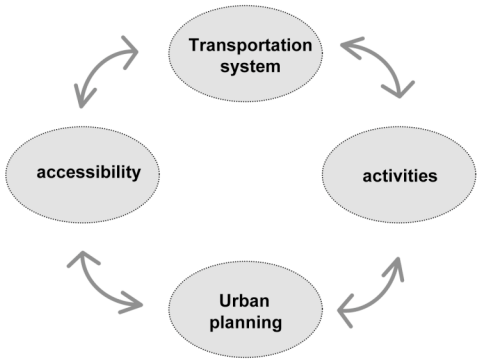


Figure 2-3 Diagram for the Land-Use Transport Feedback Cycle theory. (Source: Blana 2003)

The allocation of activities in a given space requires spatial interaction or movement within the transportation system in order to overcome the spatial distance between activity locations.

Direction	Factor	Area of Impact	Expected Impacts
Transportation Land-Use Planning	Accessibility	Residential Area	Sites that provide better access to places of work, to shops, educational establishments and recreational centers are more attractive residential areas, with higher values and rates of development. Improved accessibility is the decisive factor in settlement development. Improved accessibility throughout the entire district will lead to more dispersed settlement development.
		Industrial Area	Sites offering better access to highways and freight depots support the establishing of industry as well as its more rapid development. A location's improved accessibility is essential for new industry development.
		Office Spaces	Sites with better access to airports, high-speed railways and highways support the emergence of office spaces, lot values are higher. Improved accessibility of a location is essential for the development of new office/business quarters.
		Commercial Spaces	Sites with better access to customers as well as retail operations supports the development of local commercial spaces with higher lots values and rates of development. Improved accessibility of a location is essential for new commercial development.
Transportation Transportation	Accessibility	Travel Distances	Sites that provide easy accessibility for various destinations imply longer trips.
		Frequency of Travel	Sites that provide easy accessibility in many directions imply more trips.
		Choice in Means of Transportation	Sites easily accessible by automotive transportation lead to greater car use; easy accessibility via public transportation dictates more trips with public means of transportation.
	Travel expenses	Travel Distances	Strong inverse relationship between trip cost and trip length.
		Frequency of Travel	Strong inverse relationship between trip cost and trip frequency.
		Choice in Means of Transportation	Strong inverse relationship between trip cost and travel means choice
	Travel time	Travel Distances	Pronounced reverse relationship between travel time and distances.
		Frequency of Travel	Pronounced reverse relationship between travel costs and travel frequency.
		Choice in Means of Transportation	Strong relation between travel costs and means of transportation choices.

Table 2-1 Table showing the relationship in causes and effects between transport action and land-use planning. (Source: Blana 2003)

2.1.2 Discourses on urban space

> *"[…] unlike roads or canals, built in close dialog with given conditions and the landscape, railways were designed as comprehensive systems. Designing such a system requires a plan that determines everything beforehand such that the project follows its a-priori. Nothing from outside the chosen system can interfere with its coherence and with its workings. […] trains could operate any time of the day, and day of the year, in all kinds of weather and to precise timetables. Nothing so perfect could be achieved in the day-to-day world" (Vesely 2004:178)*

> *"However, the complexity of these spaces, […] their arbitrary chaotic nature, reveals a certain logic: the logic of the intersection of two different horizons of order and rationality. One represents the rationality of the disengaged autonomous world, the other the rationality of everyday life. We have noted that complexity is often the result of an attempt to reconcile different spheres of reality. If the reconciliation is successful, the whole situation may be enriched. Complexity can be produced, but richness must be created. The difference between engineering logic and integrative design intention may stand as a reconciliation form" (Vesely 2004:124)*

From the position of phenomenological studies on inner city railways, Vesely stresses that railway transportation space has been developed following the paradigm of a laboratory experiment that pretends to reduce its complex reality to a system of simple problems with a-priori logic. He argues transportation planning follows these methods and aims for epistemological, instrumental knowledge while the growth of urban space, itself changing and modifying the space given, has to deal with everyday life as it relates to culture, social allocations, traditional knowledge and the power of individual history.[15] In addition to Vesely, a wide range of research has been conducted on the distribution of space. Concern has been voiced about the functionalism that is assumed to emerge through transportation network approach and planning as well as the lack of attention paid to its urban surrounding's spatial or social configurations. These studies have been made in the planning field and by other researchers on urban space such as sociologists, architects and anthropologists (e.g. Brinkerhoof 1996; Koolhaas 1997; Neumeyer 1999; Marvin, Graham 2001; Easterling 2001; Asher 2004). The same scholars also assume that transport infrastructures have been closely related to our urban development and changing urban space since industrialization. In addition, mobility-promoting infrastructures are still immanent components of the

[15] See Lefebvre who assumes that part of the dilemma of our urban conditions derives from the transition, such as that the tradition of thought (which Vesely refers to as traditional knowledge) was corrected by the influence of philosophy, mathematics and epistemological domination (Lefebvre 1991:20 -35).

‘mobility-based’ society. However, these scholars’ interest is placed on the transport infrastructure and its urban potential. The focus is set on the inclusion of spatial configuration criteria and the impact of urban transportation infrastructure systems on urban areas..

2.1.2.1. The perception of transportation space from the urban research and planning perspective

Transportation infrastructure is seen as a precondition for a high quality of life and economic prosperity (see 2.1.1). But what does the access to this service provision look like and who uses it?

From the social studies point of view the perception is that the spaces around the infrastructure are conflictive and have left traces in the metropolitan space. Lefebvre introduced (already in the late 1980s) his perception of transportation space, for example of the highway, through the definition of ‘dominant space’ —dominant space being different to appropriated space, and both being products of the development of urban space (Lefebvre 1991). Dominant space appears to be transformed through the technical transport infrastructure and serves the dominant order. The space is perceived as closed and sterile. The concept of domination is contrasted with appropriation—the appropriated space is modified in order to be inhabited by citizens according to their needs. Ideally, streets can be transformed, but then they need to be appropriated.

Lefebvre’s statement received renewed attention in ‘Splintering Urbanism’ by Graham and Marvin in their hypothesis that infrastructure use is limited to certain user groups and the progressive privatization in the area of transportation infrastructure is encouraging a socio-spatial ‘splintering’ of urban space (Marvin, Graham 2001:98). Social disparities and community grouping in urban areas have been growing since the introduction of mobility has been facilitated by transportation infrastructure (Bourdin 2002:67) Transportation infrastructure is thought to disturb the social living conditions. Graham and Marvin address the social consequences: the simultaneous growth of global communications and local isolation being a paradox of the mobile society. We might be connected to remote locations and specific interests, but not know our neighbors.

Citizenship is reduced to the interchange and transition from smaller districts to the whole city space. Possibilities increase to group with those of the same social

background through direct access to their respective residential and working areas offered by transportation networks. Social membership and common values become independent of the geographic background. Bourdin even argues that besides the social disparity and fragmentation, the perspectives of the self as a social being have changed along with the development of transport infrastructure and the growth of mobility (Bourdin 2002 :67). People experience urban space in the context of their individual movements rather than as social background with oneself as a part of the group.

The development of 'non-places' due to the functional approach - the anthropological concept of transportation space

> *"Spaces of non-place achieve no particular identity or relationship, instead only solitude and similarity. " (Augé 1994:121)*

> *"Just as a place is characterized by identity, relation and history, space that holds no identity and that lacks relational or historical value is also defined a non-place." (Augé 1994:92)*

Augé and Foucault underline the perception of transportation spaces with concepts such as non-places (non-places are spaces in urban and suburban conditions like shopping malls, highways, train stations and airports) and later with the concept of heterotopia. Augé places his concern about the 'domination of space´ in the concept of non-places on the difficulties that derive from their mono-functionality, for instance as transportation spaces (Augé 1994:85). The difference to the traditional, particularly anthropological places derives from the absence of history, relation and identity and a certain communicative neglect. For Augé, a non-place is a stark contrast to a place, which presents an attenuation of diverse uses. Foucault identifies the limiting of accessibility through transport spaces as the problem in the attenuation of relations. In general, the heterotopic site is not freely accessible like public space. When entering into such a space, the individual needs to display certain uniform gestures (Foucault 1967).

The hybridization of space – the architectural perception of transportation space

In the perception and research from an architectural position, urban transportation space and the access to its service provisions are related to the disruption of the spatial configuration though its spatial development. Authors in the realm of architecture see infrastructure as an intervening effort to cut off the city. Infrastructure

projects ignore their surroundings—they produce space oriented towards technical efficiency and not towards urban quality (e.g. Neumeyer 1990; Smets 2000; Ascher 2004). Neumeyer recounts the particularities of this space as a crossover, in reference to the development of the railway lines through Berlin´s urban space during the industrialization era (Neumeyer 1990:67):

> *„Die metallischen Gitterwerke der Ingenieure gingen den klassischen Würdeformen der steinernen Monumentalarchitektur erbarmungslos zu Leibe. Die scharfen Klingen der Stahlbauten drangen in den historischen Stadtkörper ein, stutzten das gewachsene Gefüge und zerschnitten die intakten Muster der einheitlichen Komposition von Blöcken und Plätzen.“ (Neumeyer 1999:67)*

> *(„The metal grating in the hands of engineers is a merciless attack on the grandiose classical form of stone-based monumental architecture. The sharp blades of steel structures have penetrated into the historical body of the city truncating its established structure and slicing up the intact patterns of unified composition comprised of blocks and plazas.”)*

Because of the railway lines, the non-visible part of Berlin —the inside, the private area of the city— became visible. City space was transformed by a functional crossover between the private inner and the public outer. Angélil and Klingmann refer to the aforementioned emerging crossover as spaces of unrelated fragments in a built, natural, and altered landscape (Angélil, Klingmann 2000). The concern of these authors refers also to the transformation of the concept of ‘the city’ by transportation networks and their side effects, which remains to be explored. The authors revealed that inherent discontinuities emerged through the transport infrastructure development—the fragments are in ‘cohesion´ through specific linkage due to their differences. This concept needs further revision to understand what potentials this reconfigured space holds. In this context, Smets echoes Angèlil and Klingmann by stating that this apparent randomness of urbanized territory portrays an overlay of architecture, infrastructure and landscape. The transportation infrastructure systems create spatial division and are thus responsible for the disconnection of urban areas. Urban space exhibits a lack of common road development and there is a stark contrast between the handling of areas that contain transport infrastructure and the careful treatment given to the historical areas of the city (Smets 2000:214).

2.1.2.2 Functional and ‘sector-based’ approaches: The crisis of the city

> *“The result has been a broad proliferation of ‘sets´ (ensembles), some practical, some historical, but all inevitably accompanied by their appropriate ‘logic´. […] We are forever hearing about the space of this and/or the space of that: about literary space, ideological spaces, the space of the dream, psychoanalytic topologies, and so on and so forth.” (Lefebvre 1991:3)*

Scholars point out (e.g. Smets (2006); Bertolini (2009)) that the complexity of approaches, actors and tasks in the development of urban transportation areas has led to an apparent randomness within the urban territory. Responsibility is often scattered throughout different levels within public authorities. In many cases, national authorities are responsible for the country's primary infrastructure systems, while the tasks of taking care of the smaller, local-scale projects is left to municipalities. Consequently, adequate communication between the levels can be hard to maintain. Additionally, the complexity of the planning areas, the often slow process of political decision-making process and the process of passing new guidelines along with a lack of available space further complicate the planning process. The shortcomings of transportation projects have been due to a large debree to the less than interdisciplinary approaches to infrastructure planning. The engineering realm has taken over the practice as the major road builder in urban settings. Design values have therefore been neglected (Smets 2000:224). In this context, Allen explains that the problems in the transportation area derive from the logic of contemporary roads, highways and railways that are not determined by conscious design, but are rather made up of singularly conceived pieces built in accordance with their own functional logic (Allen 1999:48).

Although scholars (e.g. Smets and Allen) have recently placed the responsibility for the spatial shortcomings of transport infrastructures on a single-sector based and functional approach to development, this concern is not a new one in planning circles. In late 1980s Lefebvre was concerned with how spatial planning and practices were divided into compartmentalized knowledge, such as the realms of architecture and urbanism, controlled by politically 'privileged´ actors. Common projects and solutions, therefore, are impossible to work out.[16] The roots of Lefebvre's arguments and later, well-known work 'The Production of Space´ are in the discussions on 'The Crisis of the City' in the 1960s and 1970s.

This crisis had its origins in the many aspects of the modernization of society that are linked to urbanization processes and functionalist post-war urban planning: the car-friendly restructuring of the city and the functionalization of the cityscape (Macher

[16] Lefebvre was concerned about all the apparent definitions of space. In fact, all of this seems to reaffirm the main question beyond the increasing definitions of space and their particular logics. As the dilemma to divide the space in different realms, he saw the reason in the approaches on philosophy as the Cartesian separation of the thinking "I" subject and the object perceiving the object of thinking. This definition spans a distance between the space and the subject, the subject as creator - the mental space "I" and the social practice (Lefebvre 1991:6-11).

2007:33). It was a crisis in urban development, triggered by the urbanization process but also by urban research and functional planning, which did not offer any solutions to urbanization in terms of explanatory theories, or in spaces that provided a high quality of life. In light of the massive changes in the city Wirth, a member of the Chicago School, attempted to define the urban as a way of life in his famous essay of the same title as early as the 1930s (Wirth 1938). The focus then moved from studies on the functionality of space to analyses of the socio-spatial consequences of this development. There was a shift observing the 'city´ to observing the 'urban way of life´. This way of working at the Chicago School was based on Simmel's essay on urban space, which was written in 1903 after he had studied European cities such as Berlin at the time of dynamic urbanization (Simmel 1903:24). Simmel writes about the mental condition of urban dwellers, who—as opposed to village dwellers—were exposed to *´gesteigertes Geistesleben*' (neurotic agitations) due to changed individual behaviour according to the needs of city-life.[17] Through this understanding, Simmel points out that the relationship between labour conditions and a complex urban lifestyle, as particular cultural forms of city life, produces particularities in behavioural patterns that influences both the public and private realms.

Sennett (Sennett 2001:78) echoed Simmel decades later through the introduction of the phenomenon of the ´disappearance´ of public space and the rise of a new distinction between public and private life all due to the reorganization of urban space through modernity. Social roles and rituals that traditionally shaped the understanding of public space are blurred by the new urban development. Sennett draws on Manhattan's urban development concluding that no diversity of activity took place on the ground floor, as it was only a means of passage to the interior spaces.[18] This

---

[17] Simmel stressed changes in the physical organization of the city as the functioning around factory production, showcasing the separation of the household and the production site and the disparity of urban working conditions and wages. These changes created a distinctive city lifestyle defined by the increase of individuality, social control, flexibility and at the same time, an inability to cope with the uninterrupted flows of the metropolis, always under constant time pressure.

[18] See Sennett (1995), Industrial development and technical innovations, what Sennett referred to as permanent emerging transitions have brought the value of public space to a state of diffuse neutrality. Already in the Charter of Athens, the flat becomes the centre of the city, while public space becomes an non-named realm, manifested in subsumed functions like dwelling, leisure, work and transportation. The separation of functions disintegrates the public realm to functional patterns, (a) in the bustling of inner cities, (b) the temporal binding in work sites and (c) relaxing in areas designated for leisure. However, this changing perception of public space did not happen in a uniform way, and critics remained active within their own circles already in times of industrialization. As seen in the debate on the old city grid and the configuration of public squares, for example, in Haussmann's planning proposals of for Paris, the old grid

function of passing without staying destroyed the nature of the public square and the mix of people and the diversity of activities that once characterized it. The role of spectator who is present without acting altered the concepts of public and private behaviour. Ultimately, the distinction between public and private realms is mixed and lost.[19] This controversy between the approaches to the functional layout of the city and the lack of consideration of the social consequences would consequently finally bring about a changed perception of the urban development (process) in urban research as well as planning and architecture.

2.1.2.3 The city from the urban research and planning perspective: Relational urban space models, or from city models to urban processes

Calling the city a' theatre of social action' Mumford laid out a fundamental proposition about urban life, the potential of urban planning and citizenship from a relational perspective (Mumford 1961:93).

> *"The city is a related collection of primary groups and purposive associations: the first, like the family and neighborhood, are common to all communities, while the second are especially characteristic of city life. These varied groups support themselves through economic organizations […] The city in its complete sense, then, is a geographic plexus, an economic organization, an institutional process, a theatre of social action and an aesthetic symbol of collective unity." (Mumford1961:94)*

Social needs, their interactions and places to display them remain primary for Mumford, while the physical organization of the city and economics remain supporting issues and are not reasons alone for the development. They serve to enrich the social drama. If urban space were to lose this sense of dramatic dialogue, it certainly would not survive. Lefebvre underlines this sentiment, pointing to social practices as central 'producers´ of space. In substantiating this position, he defines space-based social interaction using

---

was erased in favor of the new mobility concept. His plans stood up to criticism and the prevailing belief in the value of the old medieval city with its public space configurations placed already in the industrial time by Sitte. (see Sitte (2002)) Nevertheless, with the modern movement the city remained conceptualized towards a mere functional approach and the replacement of old 'un-functional' space with new modern lifestyles. Planners outlined a hypothetical view of society as a point of departure, and the city was planned as an efficient machine, rational and functional.

[19] Today, the traditional definition of public is replaced with that of an area or place that is open and accessible to all citizens, regardless of gender, race, ethnicity, age or socio-economic level. www.stadtplanungsforum.de/.../SPF-STEK-ak-oeffentlicherraum-05-05-03.pdf (accessed 15th July 2009). What we perceive as public today is not consistent with the associations or social role of public space in other periods of history and continues to be a topic of considerable controversy. www.stadtplanungsforum.de/.../SPF-STEK-ak-oeffentlicherraum-05-05-03.pdf (accessed 15th July 2009)

one definition—social space consists of all aspects of (social) life, namely perceiving, conceiving and living (Lefebvre 1991:191).

a. The perceived space consists of material spatiality. In everyday life the perception of space is based on the daily routine;

b. Its production and planning requires its reduction to a formal perception of space, thus corresponding to a rational mental principal of perception, and

c. The lived space refers to a complex (co)relation between material space and the actor(s).

Urban development as a fragmented, unfinished process and 'diversion'

Through the work on the production of space, Lefebvre challenges former 'modern' views on urban development leading to a universal modernization of society as a whole, whereby the city changes uniformly, ever-increasingly adapting to the market economy, from industrialization to the new modern city. Lefebvre instead suggests the possibility of an unfinished process, placing emphasis on consistency and pointing to differences within one society (and within one city). This unfinished process alludes to the notion that urban space is in constant flux; it is a social and spatial process where space and actor interact. The urban development is a process, a 'genesis' (Lefebvre 1991:163), where former configurations (spatial and/or social) sometimes compliment or even resemble one another. With the process character of urban development, each new addition inherits and reorganizes that which came before it. Previous forms might be converted through new approaches; space becomes diverse and ultimately hybridized (Lefebvre 1991:161). Since an existing space may outlive its original purpose, which has determined its form, function, and structure, it may in a sense, become vacant and susceptible to being converted or put to use for a purpose quite different from its initial one. The built environment is continuously being transformed.

With the concept of hybridization, Lefebvre differentiates the temporal results of the process. Differences and characteristics of this genesis occur as 'dominant space' and 'space of appropriation'. The *'dominant´* has deep historical roots, for its origins coincide with those of political power, such as military architecture, fortifications and motorways, which are superimposed, dominantly marking the land and making change difficult. *Appropriation* is explained through the example of the development of *Les Halles Central* in Paris (Lefebvre 1991:163). Formerly a wholesale market designed to

facilitate the distribution of food was transformed into an area for cultural festivals for the Parisian youth. For inhabitants and tourists today, *Les Halles* embodies the cultural festivals of Paris sharing the space with the market activities and spreading out into its surroundings in the central district. Diversion stands as a physical expression for the constant social interaction with urban space, as a form of *appropriation (*Lefebvre 1991:163) of space.

The creation of urban space through everyday life practices and the difference between space and place

> *"Seeing Manhattan from the 110th floor of the World Trade Center. Beneath the haze stirred up by the winds, the urban island, a sea in the middle of the sea, lifts up the skyscrapers over Wall Street, sinks down at Greenwich, then rises again to the crests of Midtown, quietly passes over Central Park and finally undulates off into the distance beyond Harlem. A wave of verticals. Its agitation is momentarily arrested by vision. The gigantic mass is immobilized before the eyes." (de Certeau 1984:91)*

From this elevated position, de Certeau sees the plan of the city, but loses the notion of everyday life that characterizes the city for him. Here, de Certeau stresses that the city is a concept, made by strategic interactions of government, corporations and other institutions that produce maps and plans of the city and the urban space. The pedestrian, in contrast, makes short journeys or wanders without an exact destination in opposition to the orderly grid of the street. Spatial practices at the macro level appeared in the everyday activities of inhabitants (Lefebvre 1991:157). In everyday life, city dwellers use the rules and products that already exist in the culture, but in a different way to create their own place. These uses are not completely determined by the rules and their products.

Users of the urban space, de Certeau (de Certeau 1984:14) claimed, make innumerable transformations of and within the dominant cultural economy in order to adapt it to their own interests and their own rules. These rules depend upon everyday practices. Therefore, the focus is placed on daily life, activities, social relations, (re)appropriation and rituals. To understand the nature of how inhabitants' practices shape the urban development, de Certeau erases the phenomenological division between foreground and background activities. He positions ordinary activities parallel to 'higher activities' such as politics or art, citing their equal potentials. No matter how significant or superficial, everyday practices will cease to appear as the *'elusive*

discipline´[20] and shape the urban space—but in a different way. Nevertheless differences exist, institutions and dominant orders, such as officials and headquarters, produce overarching, prescriptive entities, such as laws, commercial goods, inventions and discourses in *strategies*. The goal of a *strategy* is to perpetuate itself through the things that it makes. *Tactics,* on the other hand, manifest themselves not in their products but in their methodology. This occurs in an unplanned way by individuals or groups that are fragmented in terms of space and who combine themselves and circumstances according to a current necessity. Through the investigation of social interactions in urban space, the approaches of pre-determinate uses were abandoned and the potential was recognized in how the everyday life is able to produce a particular place.

The fact that social-spatial factors need to be investigated in relation to the development of specific urban spaces has, as already explained, been recognized in studies made in the field of social sciences for a long time. It should also be noted that these studies were made in the cities of the 1970s and 1980s. Through increasing globalization new challenges have been made to the complex urban interaction space, however it continues to be understood as a social-spatial process and is still the focus of research (e.g. Löw 2002; Appadurai 1996; Massey 1994).

> *"What can a locality mean in a world where spatial localization, quotidian interaction, and social scale are not always isomorphic?" (Appadurai1998:54)*

> *"Imagination […] is actually a collective tool for the transformation of the real, for the creation of multiple horizons of possibilities. The production of locality is as much a work of imagination as a work of material social construction" (Appadurai 1998:25)*

In this context Appudurai defines the specific place as a 'locality´ and presents the thesis (aligned with the basic concepts of the production of space e.g. Lefebvre (1991)) that 'locality' illustrates a process. 'Locality' is based on actions and relationships. Appudurai's social-spatial concept of the production of space is extended by the introduction of the term 'imagination'. Imagination becomes more important through the media's move towards globalized spatial development that tells of far off places that have not been experienced personally and through the high degree of individual personal mobility. These results, as Bordin already explained, in an individual development that does not take place in harmony with the social fabric of a local

[20] de Certeau refers to a very descriptive picture image explaining the meaning of everyday practice: The picture of a worker writing a love letter while on the clock, thus, 'stealing' time that he should be using for work.

context, but experiences individualization whereby imagination can be understood as the motor of the individual development. While Appudurai sees the extension of mobility in imagination, Massey updates Lefebvre's basic concept of space too, with the specific local sociality as interrelation between materiality and immateriality. This relationship is that which renders a space important or meaningful. According to Massey, space is a process of correlations, of (simultaneous) coexistents and interrelated social interactions. Here space, as the 'product' of all these relations, is encompassed from a local to a global level, 'stretched out over the planet at every different level, from the household to the local area to the international.' (Massey 1994:7)

The city as places of exacerbated differences

The focus on the specific place approach has also been present in the architecture realm for the last two decades. Urban space and its particular patterns and qualities remains a subject to be further addressed. Planning methods include key concepts in their conceptual frameworks that refer to the development of space in terms of the actors who built the urban space (et. al Bunschoten 2005).

In the age of modernity, space was perceived as a functional realm to be shaped by planners for a new future without much consideration of historical formations. However, Scharoun described urban space as more than its functionality, as a continuous system, flexible enough to incorporate changing social conditions along with empty spaces as well as dense areas of infrastructure and housing. He described it as an interconnected entity, a '*mental landscape*', including past spatial and cultural traces (Sharoun 1964:45).

After studying Berlin´s urban development Oswalt concludes with his definition of the '*Automatischer Urbanismus' (*Oswalt 2000:116) that urban space is perceived as an overlay of different social approaches to space that grow unaided. Different times of development create a particular condition of space, where the previous form and its intention is mixed with the new approaches. The urban space is a formation in which the opposing elements come together with varying dynamics to develop in synchronicity. The spatial configuration is perceived as an accumulator and its ultimate function as that of a transformer. This reshaping of forms stands as a physical indicator of the constant social impact on the city space. Koolhaas defines this reshaping, reflecting on urban development and the specific site, reconsidering the city (as places)

of exacerbated differences, which rather than following the ideal of a harmonic order, is marked by the juxtaposition of opposites, by a permanent hybridization.

2.1.2.4 'Place-making' - for economic and planning strategies

The transition in the 1970s from a Fordist society, marked by mass production and consumption as well as by interventions from the welfare state, to a Post-Fordist society with flexible accumulation regimes has been well documented and discussed, particularly from a regulation-theoretical perspective (e.g. Sassen 2000).[21] In the early debate on globalization, and particularly the discourse on urban economic dynamics, the whole city or industrial nodes are understood as catalysts for global economies (Sassen 2002). This may not be a new trend as Weber stated; the reason for the development of the city is based on its role as a marketplace, defined as the physical configuration and means to convey the processes of capitalism (Weber 1956:810-819). Nevertheless, Castells gives this perspective a new slant with reference to the network society. In his perception the market is not fixed to one city (Castells 1996:400-450). Economic flows develop under the management of the decision-making elites in a world system, networked at regional, national and continental scales. Spatial segregation in one city already increases with globalization because 'global players' and specific elites influence the development of urban space in different ways (Castells 1996).

However, recent studies on urban economies (e.g. Sassen 2002) refer back to specific places. Place-specific characteristics carry a unique potential for economic development and are becoming increasingly significant for the growing tourist-oriented (Porter 2000) and creative industries (Florida 2005). The concept of constructing and 'selling' the image of a city through special places has become essential in new urban studies and marketing strategies of the post-industrial society. Harvey characterizes this development of city marketing and *'place-making'*, as the new *'urban entrepreneurialism'* According to Harvey, *'the active production of places with special*

[21] Based on communication and the exchange of information, the service-based economy designates the consumer as a central production target. Thus, central positioning has been the basis for an increase in marketing strategies to be competitive against other providers. Within customer analyses, the development of corporate identity and advertising represent an additional process just as important as the manufacturing and production of the product itself. The service sector employs the highest number of workers in many countries of the European Community (UK: 70%/ Germany 77%69). See http://www.bmfsfj.de/Publikationen.html , (accessed 21st June, 2009). In 2008 the highest increase of employees was seen in the service sector with 1,1 million more employees than 2007. (Zeit Online, 2008) and http://www.futuremanagementgroup.com/Zukuenfte/ZFIF-Tertiarisierung-und-Quartarisierung (accessed 20th July 2009)

*qualities becomes an important stake in spatial competition between localities, regions, and nations' (*Harvey 1989:295).

In general terms, it can be stated that in the architecture and planning realm place and its dimensions is a subject that also seems to have been rediscovered. The attitude can also be found in the planning policies. A marker of Post-Fordist urban development and urban restructuring is the increased competition between cities from a regional to a global level. This shows a movement in urban development politics towards the city as an enterprise, and is characterized by a high degree of image and symbol-rich city and location politics (festivalization, eventization, aestheticization, flagship development, etc.) as well as increased social-spatial polarization and exclusion processes.

In Europe, recent decades have brought a range of (re)development and revitalization strategies where place plays a key role in the development for the whole neighborhood. These policies focus on specific sites and their particular urban potentials. Since post-modernism, architectural concepts on place or specific sites have generated intense debate on the aspects of forms and their potential to reflect urban activities. Spatial forms, such as squares and blocks, become symbols of public urban activities in the planning concept of Rossi and Krier.[22] Public urban areas are defined by their shape and by the enclosing buildings, thus separating private from public realms.

Urban regeneration proposals that appeared in the mid-1990s still have their validity, such as the 'Planwerk Innenstadt' in Berlin or 'Urban Renaissance' in other European cities. A common thread is the provision of attractive urban spaces with ambitious architecture and urban design. The particular place has become a significant issue for scholars who believe that it carries specific potential to bring out urban qualities and express sociability forms in urban space. The specific spatial development and facilities are intended to serve as anchor points that may influence their surroundings or act as a catalyst for urban regeneration.

---

[22] These refers to the design outline by Rossi for the development of IBA Project (IBA new) in Berlin in: IBA (1987), p. 78; To the design outline by Rob and Leon Krier for the housing project Kirchsteigfeld in Berlin, in: Stadtbauwelt - Themenheft der Bauwelt (2002)Nr.156 (Bauwelt Nr.48), S.32-37

2.2 Theoretical framework: What is an urban transportation space? Transport, urban practices and commerce

The discussion among scholars outlined in both reviewed discourses—transportation planning and urban research and planning—shows that they remain divided in their perceptions of, approaches to and problems associated with the urban infrastructure area. However, urban railway space has become a contested field in new planning proposals and among scholars.

On one hand, in a broader sense, being mobile is perceived in a mobility-dominated society as the opportunity to choose the best option for labour, goods and services. According to the division of work in urban areas, the transport infrastructure area essentially enables access to work, commodities, housing, education and culture. In this context, access (or lack thereof) to public transportation is not only related to scenarios of disadvantage and deprivation at the individual and group level, it actually plays a key role in their creation.

Additionally, current planning strategies, such as *'Urban Renaissance'* in different European Cities (e.g. London or Paris) and Berlin's *'Planwerk Innenstadt'* proposal, focus on the inner-city areas, where railway space located in the former city centres has been earmarked for redevelopment. These strategies' aims are both to serve the increased demand for transportation integration and, from the urban development perspective, to 'properly´ integrate the increased flows of mobility in the city area thereby creating urban space of higher quality.

In this shifting context, international as well as national scholars (e.g. Bertolini 1996; Peters 2009)[23] call upon a step forward from the fragmented perception and divided field between disciplines (as also seen in Chapter 2.1) on the transportation space and urban development. The appeal is to work with the complexity of the railway space and its recorded shortcomings, such as derelict urban areas, and it calls upon integrative projects and research on the development of the transportation site. While some scholars in the planning realm still stress concern about the development of urban transportation areas, others have begun to try understanding the nature of current development, its problems and its potentials to develop the area of transport and

[23] Presentations of both scholars at the Technical University of Berlin, Workshop, "Railways, Real Estate & The Re-making of Cities in the 21st Century", railway station area redevelopment mega-projects in Europe & beyond, 16th& 17th October 2009

mobility in ways beneficial to the urban situation. However, historical reflection shows that transportation systems along with their particular technical requirements and functionalities have been the basis for urban models, first through railways and then through cars in later times of industrialization (Schivelbusch 1986:140-160; Giedion 1976:508). Meanwhile, citizens and their particular practices have been constantly changing the development of the particular transportation area. However, through the review of the specific development patterns, a third component becomes essential to the formula of space development – the associated commercial activities in these areas. Already with the introduction of railways into the industrial city through viaduct lines and the station nodes, not only inter and intra-connectivity were enhanced in the urban fabric. The railway and citizens' practices catalyzed the development of new urban configurations and buildings as well as commercial practices that profited from the steady flow of people in specific areas in the city.

This section is organized to reveal these 'archetypal patterns' observed in the development of urban transportation areas during industrialization, the modern movement and the post-modern context and will reflect on how the nature of the transportation system, commercial dynamics and social behaviour and practices have developed the transportation area.

2.2.1 New Market: Rails, major urban scales, the department store and land prices

> *"They may be primarily junctions, places of a break in transportation, a crossing or convergence of paths, moments of shift from one structure to another" (Lynch 1964:56)*

With the introduction of the station significant new building typologies emerged in the metropolis: The viaduct with its rhythmic pattern structurally supporting the railway line and the station. Two spaces and two materials were embodied—one belonging to the city and the other to the railway—the palace made of stone (entrance hall and passenger space) and the factory made of glass and steel (train hall). Schievelbusch argued its functionality:

> *"The unlimited and shapeless space of the railway trip comes into the train hall, into which the train enters, a first limitation and it is cut down again in the traditional stone architecture of the reception building. Thus is created a continuous transition in the city spatiality." (Schievelbusch 1986:155)*

Additionally, particular urban areas developed in the surroundings of the station—the new station square and *Bahnhofsviertel* (station area), a doubling of the old center

(Wucherpfennig 2006:86). The station square was always two things at the same time: a practical space, and a representative space.[24] The *Boulevard*, a new enlarged road and business area, connected the city to the former city center, the main central market area. Linear structures were superimposed on the irregular street patterns of the medieval town centers, with the rhythmic viaducts that supported the railway cutting through the old structures. Streets were adapted for the fast flow of vehicles in dense city areas and interconnected the new upcoming market areas around the main train stations, as in Haussmann's city planning design for Paris illustrates.[25] Due to their visibility and accessibility, streets have always been attractive and considered very profitable for commercial activities (Dijkstra, Hashimoto 2001:45). Nevertheless, with the Boulevard a new commercial typology emerged as the earliest department stores were built (1852 Bon Marché in the center of Paris) and new dense residential projects flanked the road. Thus, gradually the *'Magasins de Nouveauté'* and the passages were replaced with more efficient organization and bigger storage capacity. Although the business tradition remained, new scales of commercial activity emerged in accordance with the increased scale of traffic areas, reaching more customers and enriching stocks through better supply availability. In addition to the commercial enterprises surrounding it, the station itself also hosted functions beyond transportation. Schievelbusch explains the introduction of the press shop for travel reading and the appearance of the *'Bahnhofsrestaurant',* the station restaurant in the station area (Schievelbusch 1986:56).

The main central train stations extended market activities from the central market space to the new points of mobility—the station square and station surroundings—and within stations in key urban areas, national and international ones (Schievelbusch 1986:165). Within a very short period of time, the new commercial zone became one of the most important 'addresses' of economic dynamics and societal use in the industrial city. Mobility was a significant catalyst to this development—it enabled a new form of societal representation and real opportunities to connect with other important European markets (von Gerkan 1997:41). Due to the new economic dynamic between the urban

[24] Bodenschatz presentation at the Technical University of Berlin, Workshop, " Railways, Real Estate & The Re-making of Cities in the 21st Century", railway station area redevelopment mega-projects in Europe & beyond, 16th& 17th October 2009

[25] see Declève (2004) in its description to the Scenographic of the urban public space through the last two Centuries.

area and the station, land prices around the station increased rapidly.[26] The station's representative front side was a stark contrast to the far less attractive area to the rear, where less desirable activities took up residence. Here were technical facilities related to the railway station, noisy and polluting commercial businesses and industries as well as slums and the red-light district, where the less fortunate elements of the early capitalist society earned their keep. Railway stations were therefore two-faced: the front symbolized the well-groomed bourgeoisie, ambitious new urban wealth and economic and technical progress; the rear was a place where undesirable uses mixed with the dilapidated workers' housing.[27]

Structural reconfiguration of the city periphery and the suburb

Reloading points were established at sites on the outskirts of the city, because of the advantageous land prices to be found there. The replacement of the city wall with the ring-street concept, e.g. in Vienna, shows the urban development concept of orthogonal and twisting streets and wide boulevards combined with the new importance given to trains and car-friendly design. In addition to the station, its surrounding area was also equipped with a new station square, around which the suburbs developed; these were usually built for wealthier people keen to escape the noise and pollution of the industrialized city center. Due to this urban expansion the new 'transitory' nature of space had to be confronted. Previous concepts of urban space as a physically permanent state expressed in the dense formations of the city center were revised.

2.2.2 The marginalized railway space: Cars, urban group form, and production and consumption patchwork

> *"The domination of mobility over space has finally created infrastructures for mobility. These were to be specialized in terms of exclusiveness of use: highways for cars, subways for trains. On the other hand, their scales of insertion in the existing city fabric were massive and in some cases strained. In other words, traffic and street life became separated, first by the partition of the road itself, later by the attribution of specific uses in function of the road's position in a hierarchical network overlaying and interconnecting." (Smets 2000, in: Lotus 110, 2000:222)*

---

[26] Ahlfeldt presentation at the Technical University of Berlin, Workshop, " Railways, Real Estate & The Re-making of Cities in the 21st Century", railway station area redevelopment mega-projects in Europe & beyond, 16th& 17th October 2009

[27] see detailed outline Peters, Alfaro d´Alençon (forthcoming)

"Mit dem Straßenverkehr verloren die Eisenbahnen erheblich an Bedeutung. Diese Entwicklung und die Zerstörung durch den zweiten Weltkrieg förderten den Niedergang der Bahnhofskultur und die Veränderung der Rolle der Bahnhöfe in den Städten. Probleme Individualverkehr und Eisenbahnverkehr in den engen Stadtzentren in Einklang zu bringen, standen in den Vordergrund. Der Verlierer war häufiger der Bahnhof. Bahnhofskultur wurde vom Bahnhofsmilieu abgelöst, eine wenig schmeichelhafte Kurzformel für das zum Teil trostlose Erscheinungsbild vieler unserer Bahnhöfe und deren Umfeld." (Wissmann 1997:9)

("With the introduction of the automobile, the railways lost importance. This development, along with the destruction caused by two world wars, fostered the decline of a train station culture and changed the role stations played in the cities. The problem of conciliating road and rail traffic with the restrictions of city centers was in the foreground. The stations themselves were frequently the losers. The station culture was replaced by a station milieu, a euphemism for in part the despairing appearance of many of our stations and their surroundings.)

With the introduction of individual motorization, connectivity was rearranged in a flexible manner, overriding the defined stops of railway networks. The station and its surroundings, a center of commercial activity during industrial times, became neglected during the 1950s as car use rose and became the preferred mode of transport in Germany (von Gerkan 1997:33). Trains, however, continued to grow and it became impossible to house their new dimensions within the *'Bahnsteighalle´,* the train hall. Its elaborate steel and glass constructions were replaced by more cost-effective structural solutions such as reinforced concrete. Meanwhile, the station square's functional aspect developed as a place of interconnectivity of different modes of transportation as well as with the huge urban highway systems.

"In line with these measures the entrances to the stations with the proportion of door openings were hidden to the extent of being unrecognizable under the mediocrity of "potato architecture". The pedestrian was sent through an underground tunnel labyrinth with sanitary tiling surfaces and depressive lighting originating from neon strips randomly screwed to far-too-low ceilings. The milieu of the railway station design concept borders on an aesthetic insult with its flashy ordinary combined shades of brown, beige, and orange, equally oppressive light flashes, far too little height and other architectural details " (Giedion 1976:508)

New emerging mass-transportation corridors

In the two decades following World War II, highways were introduced to the urban areas of Europe. They were built in close connection with former train tracks (e.g. Berlin's Stadtautobahn and Ringbahn), disregarding existing (historical) city grids and favouring the urban voids. The old rail tracks and the new highways became large-scale traffic corridors connecting production and residential areas throughout the city. In addition, peripheral patchworks of production areas, industrial developments on the outskirts, single-unit houses, mass residential areas and shopping markets extended

the distances for everyday activities (Dant, Martin 2006:103). Tracks and roads began to function as sovereign entities, clearly detached from their surroundings with a network logic of their own. Giedion refers to planning concepts as shifting, as planners attempted to organize the new spatial configuration within a three-dimensional network employing megastructures and group forms (Giedion 1976:508). Both networks organized space from the macro to micro level, between roads, paths and individual built-up areas like neighborhoods (group form), and neighborhoods and working areas within large-scale road frameworks (mega structure). Railways and roadways, linear open spaces and other linking elements were developed to connect parts of the urban area. Precedence was given to systems of movement and the efficiency of infrastructure over patterns of defined outdoor space.

2.2.3 Current urban transportation space design strategies: Or how railways relate to urban space and service: Transport, peri-urban space, consumption and service

> *"A place that embraces the movement generated by traffic, yet also fulfils the aspirations of those who happen to stroll by. An aesthetic that combines the fascination for motion and the constant variation it entails, with a configuration that absorbs tranquility and conveys a sense of permanence. Such a task requires a concept that addresses many layers and utters many meanings. […] Urban designers and landscape architects have been relegated to the task of planning squares and parks. This division of course explains the difference in many European countries between the exaggerated care for the surface treatment of historical towns and pedestrian districts. Compared to the negligence of common road space in other areas of urbanization […] this incorporation of change also sets a standard for the only viable idea of incorporating infrastructure in its spatial environment." (Smets 2000, in: Lotus 110, 2000:218)*

The overall negative attitude towards large road and rail projects, seen as barriers, physical and visual and polluters began to be countered in the late 1990s in several dense urban areas (e.g. dense areas of cities such as Paris, London or recently Berlin) where transportation areas were re-designed. However, the frequency of such projects throughout Europe also indicates that many cities are still struggling with their (old) transportation infrastructure, sometimes obsolete but characterized by schemes for extensive rail and car use (resulting in industrial railways or the highway planning of the 1950s and 60s). A common thread is the aim to integrate public areas and place quality into derelict urban areas surrounding urban infrastructure space. Furthermore, the proposals also include efforts to hide the lines under concrete covers and walls with new park or path design along neighborhoods to mitigate noise and pollution. This concept is evident in the redevelopment of the highway running through Saint Denis district in Paris or the re-development of the *Roosevelt Drive* in New York City where

the transportation infrastructure is combined with green areas, interconnected by pedestrian paths through the new park that was designed to cover the road.

'Shared Space' – Approach

Besides the ideas to incorporate infrastructure into the urban design of the adjacent areas, projects have emerged, starting in the Netherlands in the late 1990s and more recently in Germany and in Berlin (e.g. 2009, *Projekt Bergmannstrasse* in the Kreuzberg district), entitled 'Shared Space'.[28] The approach seeks to develop urban space for all inhabitants, including all modes of transportation incorporating pedestrian walkways, public transportation and bike routes. All kinds of roads and paths were developed at the same level. The results observed by researchers evidenced a better organization of mobility for all modes of transport; biking rates increased while transportation-related accidents and emissions were reduced. In addition, the projects resulted in a better livability due to better design and mixed-use possibilities of the areas.[29]

(Old) Railway Infrastructure as 'Flagship' - Project

While many cities try to incorporate transportation infrastructure to mitigate negative impacts, other cities have started working on how to deal with old infrastructural elements that, due to recent infrastructure development, have become obsolete.

A few years ago, a railway line, a viaduct in Paris -*Promenade Plantée*- was converted into a park, and the conversion led to the revitalization of the surrounding neighborhood by attracting new businesses and residents to the arches. In Zürich, the old viaduct line formerly separating the old part of the district 5 and the new areas in the inner-city space has become a new site for inner–city shopping and retail. The intention stated by the developers PWG Foundation of the redevelopment project *IM VIADUKT* is '*creating a hub of enjoyment, aesthetics and creativity from which both the city and the tenants could profit'*.[30] By planning low rents for the arches the viaduct is expected to become a

---

[28] see for details of the concepts www.shared-space.nl (accessed 15th July 2009)

[29] see for further reference cases www.shared-space.nl (accessed 15th July 2009)

[30] See PWG Foundation - Stiftung zur Erhaltung von preisgünstigen Wohn- und Gewerberäumen der Stadt Zürich. (Foundation for the preservation of affordable housing and commercial premises of the City Zurich). http://www.mimoa.eu/projects/Switzerland/Zurich/Im%20Viadukt (accessed 12th March 2010)

melting pot of the individual creative businesses and will offer a broad mix on business opportunity for different 'sections´ of the population.

Similar initiatives currently exist in some American cities-the highest profile case in point is the *'High Line Project´*, an example of how the general attitude has changed drastically over the years. Just a couple of years ago, the demolition of the transportation line seemed inevitable, yet today its restoration has become a top priority of the city administration.

> *"The High Line will be a promenade - a linear public place where you will see and be seen. You will sense New York's industrial past in the rivets and girders. You will perceive the future unrolling before you in an artfully designed environment of unprecedented innovation. It will be yours - public in the truest sense of the word. Public dollars helped build it in the 1930s. Public legislation empowers us to make it a place anyone can visit. It will be proof New York City no longer casts aside its priceless transportation infrastructure but instead creates bold new uses for these monuments to human power and ambition"*[31]

One of the motifs for the *'High Line Project´* was explained by Joshua David, one of the co-founder and chef development officer of the initiative *Friends of the Highline* initiative (FHL). He hopes that it will function as a catalyst for further economic development in the district, generating an image that attracts more people to work and live in the area. Worth mentioning is that the initiative was supported, among others, by the mayor of New York along with senators and congressional representatives who managed to bring major federal funding to the project. The architect team, Diller Scofidio + Renfro Architects under the direction of FHL and the City of New York created the design for the reuse. Theirs was the winning proposal from an open international competition (that received 720 international entries). In recent years, the once industrial neighborhood surrounding the High Line has started to gain new popularity and life. *'Flagship Projects'* like this have become catalysts for the transformation of a whole neighborhood or district with the old industrial facilities converted into recreational and other uses. This trend may incorporate railway stations as well. The station and its surroundings are places that have significantly changed in terms of their social status. Once main points of commercial activity in the industrial city, they were neglected in favour of extensive car use from the 1950s (See 2.3.2). One of the most positive examples of the restructuring is the *Grand Central Station* in

---

[31] Friends of the High Line in personal interview concerning the outcomes of the project, July 2005, New York City. The organization who call themselves Friends of the High Line has been working to mobilize and involve high-positioned persons since 1999.

New York built in 1903. In 1978, the threat of demolition seemed inevitable. However its renovation in 2004 and the establishment of high-quality restaurants and commercial activities in the surrounding area, led to the station becoming a popular venue for New Yorkers.

The railway station as concentrated transportation and activity 'hub'

Since 1998 as part of the '*Projekte 21*'[32] strategy, main stations were reconstructed in key cities in Germany such as Hamburg, Stuttgart and Frankfurt. The most recently finished project was Berlin's new central station completed in 2006. *Projekte 21*'s aims were to integrate the stations into the city structure and to create a new quality of station space with the development of a 'train station aesthetic that should provide singular and exclusive service offers' (Steguweit 1997:310-320). In this context, one of the most dominant trends seen again today is the mix between railway space (station) and commercial activity. Nevertheless, commercial areas associated with the train station have been today converted into 'integrated´ train station design. Shopping areas have been developed with their particular mall design typology--as enclosed spaces with only commercial activities and little regard for the outside area. There are varying opinions about whether the commercial sector's strong influence has contributed positively to the use of the station. The consequence of this might be that shopping gains a greater influence on how people move through the station and on their motives for using it. The development of this area may therefore not only depend on how to integrate the transport infrastructure into the urban space but also how the new shopping space may become a benefit for the surrounding area.

Nevertheless, shopping is not the only function that confronts the station today. There is a growing trend for the train station to continuously gain new functions and become evermore complex. Descriptions of new stations (e.g. '*Eurolille*', '*Utrecht Centraal*', *'Hoog Catharijne*' or '*King's Cross´*) detail complex buildings where the station contains

[32] Within the planning proposal for new stations in Germany the project core of Projekte 21 was launched. These planning proposals incorporate new design strategies for the stations in Germany. The changes incorporated new design strategies for the stations to change the obsolete image derived from the stations in the 1960s and 1970s in Germany. In this context amongst other stations the Hauptbahnhof in Berlin was planned.

commercial areas, facilities such as conference spaces and various sorts of recreational spaces.[33]

Since 2000, transportation researchers like Asher (‘*Systéme BIP’*: English CIP System: Commodities, Information and People (Asher 2004:68)) or urban researchers such as Castells (‘*Network Society’* (Castells 1996:45)) or Soja (‘*Nodal World’* (Soja 2000:177-181)) have been introducing conceptual models of emerging urban development. These highly specialized nodes in peri-urban development or multi-centered urban regions cover the society’s needs for increasing mobility with a high pattern of intermodality and concentrated activities. Thus, nodes are expected not only to concentrate flows of travellers, but also information and service and to further enhance the connectivity within other *‘hubs´* in regional or global positions. The high level of person, material and immaterial linkage is proposed to be facilitated by Information and Communication Technologies (ICT). ICTs employed in the labour process have already allowed networks (business, personal, social) to develop without geographical constraints and concentrated business activities to increase.[34] Global business networks are enhancing employee and professional mobility and changing their places of work between different centers of productivity (Sassen 2002:78 – 120).

In addition, many companies are implementing ‘inventory postponements´. While stock moves from manufacturers to suppliers, storage costs are reduced but transit to production processes increases. The development of the transportation node, ICTs and the working and living conditions are providing spatial configurations without physical constraints for the urban space and allowing a new configuration of the discussed relationship between transportation-commercial and urban space development. In this

---

[33] The Japanese Foreign Office's ferry terminal in the port of Yokohama is an example of how a traffic space, originally carrying a private function emerges as public space. By defining the roof of the terminal as an open public space, the building in itself turned into an attraction for leisure facilities and recreational occupations. It is important also to view the port terminal in a larger context. The site for the terminal was the "missing link" in providing the city of Yokohama with a continuous structure of public spaces along the waterfront.

[34] Within ICT information and transportation freight, production processes are broken down to an increasing number of geographically separated, but specialized tasks. This is taking place due to the increased economic advantage of mass-production and standardized components, employees and travel possibilities. The locating patterns are changing, as headquarters move to the periphery, no longer having the need to be physically connected to clients. On the flip side, main branches and the top-level management and control functions are located in trendy spots and economic hubs to show their presence and display corporate identity. Dispersed and concentrated business activities in accordance to market strategies and rental prices are challenging previous notions and concepts of the network with steady lines to new concepts like uneven nodes interconnected with transportation (Sassen 2002:78 – 120).

context, the railway station appears as a new nodal point, within the 'hub´, as an intensive point of intermodality, a concentrated traffic and activity entity in the urban space. The station serves both the connection to other and further reaching transportation systems, as well as the development of other diverse activities, such as shopping and office areas, 'materializing´ the global dimension of the station space. These activities are thought to become the pattern to characterize the specific station site, some sort of new *Bahnhofsviertel*, which shares its particular development with the activity of the transportation node.[35]

The local economic stimuli of the station are not only expected to provide the reduction of transport costs. Rather, and more importantly, they will bring economic agents closer together and intensify activities at one point, increasing productivity gains.[36]

According to Steguweit, the rail network has experienced a change in its use; the cities at the end of the twentieth century were to become centers of services and communications (Steguweit 1997). The products of these economic sectors are of an immaterial type, and as such, produce a significant reduction of material transportation. The urban stations, for the most part, service public transportation. The station can, therefore, be conceived mainly for the purpose of meeting the demands of the travellers. The rail service must cater to a changing customer profile, which includes 'small company employees and business travellers' and, in general, a larger diversity of customer interests.[37] In addition, the station, as a direct linkage between other cities and regions, as Ahlfeld concludes, theoretically may become the centre of the city's concentrated commercial potentials. In return, the developments (strategies) of the station are expected to revitalize and upgrade the station and urban surroundings (challenging its former marginalized status during the last decades) or at least to change the meaning of the transportation node, the station. Bertolini suggests the development of the hub means the station will become a 'magnet' for more than just

---

[35] See Bertolini (1996), p. 332 or the sholar presentation at the Technical University of Berlin, Workshop, " Railways, Real Estate & The Re-making of Cities in the 21st Century" Railway station area redevelopment mega-projects in Europe & beyond, 16th& 17th October 2009

[36] See Ahlfeld presentation at the Technical University of Berlin, Workshop, " Railways, Real Estate & The Re-making of Cities in the 21st Century" Railway station area redevelopment mega-projects in Europe & beyond, 16th& 17th October 2009

[37] Ibid.

the transportation linkage activities. It generally offers office space and shopping, while other activities such as sport, recreational facilities, exhibition and convention centres, hotels, government buildings, housing and light industry may also appear in the station. (See table 2-2).

Existing Uses (m2)	Utrecht City (1993)	King's Cross Regeneration Consortium Proposal (1991)	King's Cross Railway Lands Group Proposal (1991)
Offices	185.000	544.858	180.000
Social Housing	(945 units)	50.321 (575 units)	130.000 (1340 units)
Housing for Sale	included above	100.641	65.000
Leisure	n/a	16.722	22.255
Community	n/a	16.722	22.255
Shops	76.500	28.870	30.000
Hotels	Included above	9.290	10.000
Light Industry	n/a	18.580	39.000
Parking (cars)	(3.400 places)	n/a	n/a
Parking (bikes)	(6.000 places)	n/a	n/a
Total	**(28.8 ha.)**	**785.054**	**498.510**

Table 2-2 Comparison of uses in three new train station projects: Utrecht, King's Cross Regeneration and King's Cross Lands Group. (Sources: Bertolini 1996), own elaboration

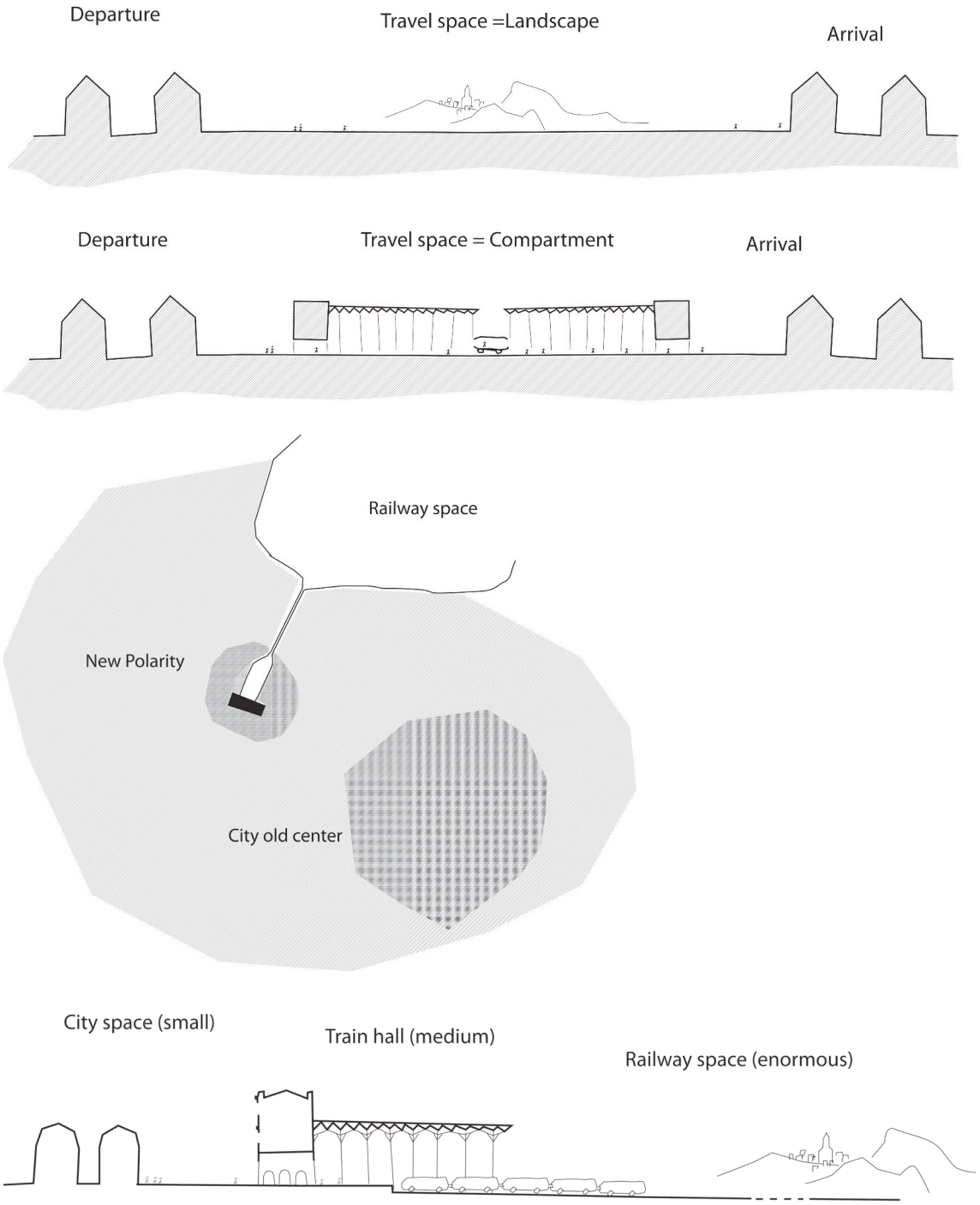


Figure 2-4 The station emerged as a new building typology. (Source: Alfaro d´Alençon 2009).

The station was a new building typology. It embodied two spaces and two materials – one belonging to the city and the other to the railway - the palace made of stone (reception and passenger space) and the factory made of glass and steel (train hall). A new typology of spatial use and new building configurations appears with the aim of connecting the railway line with the urban area. Thus, reloading points were placed in the search for advantageous land prices in the geographic periphery.

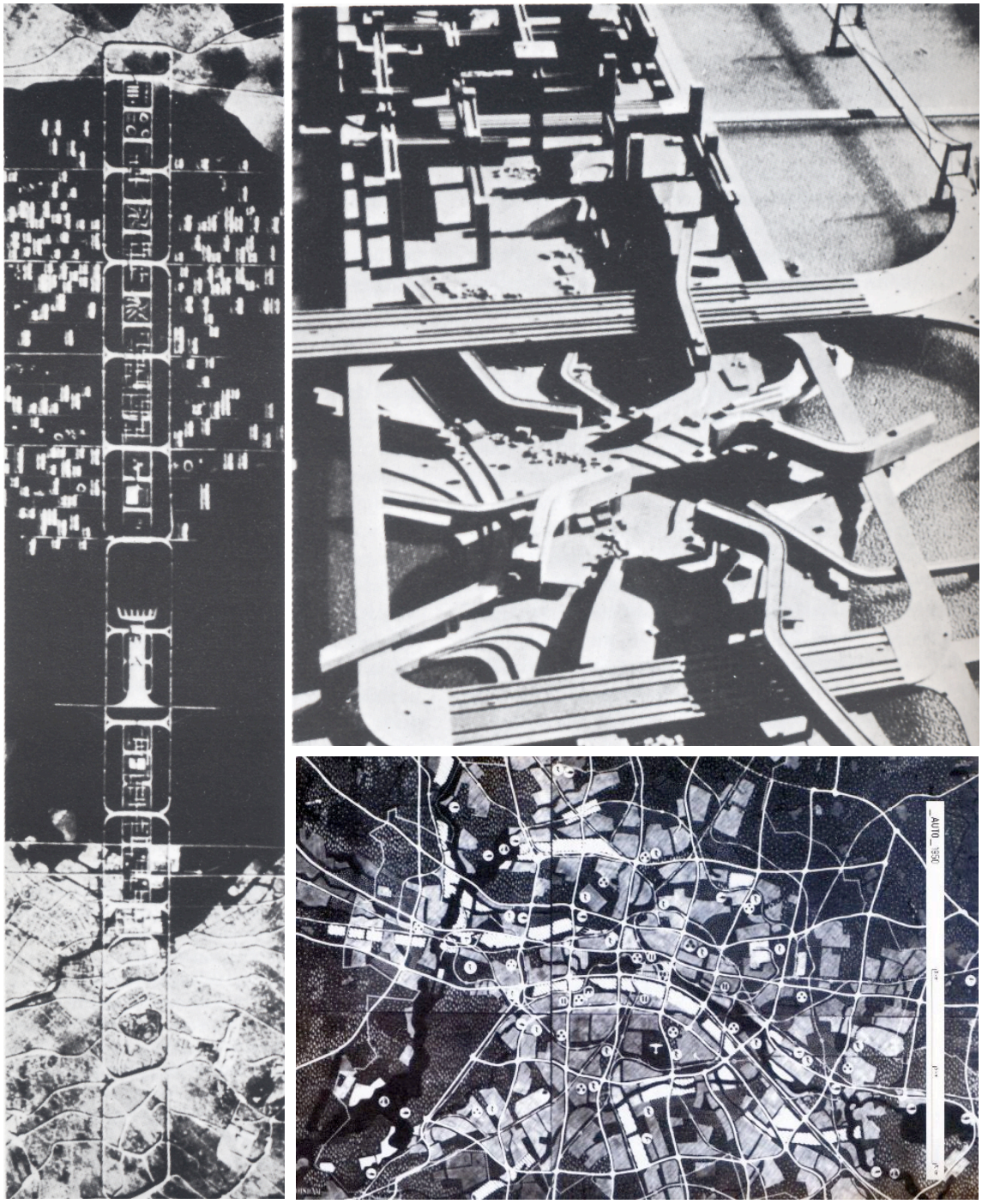


Figure 2-5 Group forms and Megastructure, Kenzo Tange master plan Tokio in 1960.

Group forms and Megastructure. Kenzo Tange master plan Tokyo in 1960. (Source: Giedion 1976) Kenzo Tange's design for the Tokyo urban area in 1960 shows a megastructure of interconnected transportation networks towards the bay. The second figure shows Kenzo Tange's design for Tokyo city. Here the megastructure is as framework of transportation network that organizes the urban space within group forms of residential areas on a large scale.

Figure 2-6 'Autogerechte Stadt', Hans Sharoun master plan for Berlin in 1946 (Source: Oswalt 2000).

Sharoun as municipal building councilor outlines for the re-development of Berlin, after the 2nd world war a new master plan for the city. The plan foresaw an unlimited homogenous network concept in transportation corridors organizing the existing and forecast mobility flow for Berlin. While this purpose was conceived as to radical, future master plan overtook the idea as the urban highway systems for Berlin inner-area. The new urban highway was installed parallel to the already existing ring-road structure in West Berlin.

Figure 2-7 Promenade Plantée, Paris (Sources: Alfaro d´Alençon 2006) and Highline, New York (Sources: a+t, 2006: 100 - 110)

During the international High Line competition, efforts were made to preserve and re-use an old elevated railway structure called the High Line, which runs along the western side of Manhattan. The intention was to make this space, at the time closed and overgrown, accessible to pedestrians and to convert it into a public park. Built in the 1930s, the area was a dynamic industrial neighborhood; the High Line led the trains directly into the factories and functioned as an efficient link between markets and industries. From the 1950s and onwards, trucks overtook the transportation of goods, and, by 1980, the trains had stopped running completely. Within the general decline in the area, private owners purchased land under the High Line and started lobbying for its demolition. At the same time, an initiative called Friends of the High Line awoke community engagement in the neighborhood, while engaging stakeholders both in the city and on a federal level, and after many legal disputes in 2009 the vision of turning the High Line into a green public space came to fruition.

2.3 Synthesis and conceptual framework: Coping with complexity

This section will elaborate on the previous discourses to form a conceptual framework for the following research work. The most important aspects of each discourse will be described: firstly the effects of the antagonism between the transportation provision and the urban realm on the urban transportation area (see 2.1) and secondly the practical development of the archetypal urban transportation projects mentioning a correlation between transportation development, and urban dwellers practices (see 2.2). So far, the key-components have been summarized as follows:

Discourse on transportation concepts

Far-reaching concerns about excessive car use and pollution have led to transportation planning shifting from a '*predict and provide´* perspective towards inter-modal systems. A new focus lies on concentrating development (*hubs*) and perfecting the existing network (*intermodality*). In this planning context, train stations are increasingly seen as key-points for the interchange from car use to public transportation means (*Park & Ride*). Secondly, although the transportation discourse sees the train service as a viable alternative that can potentially combine private car use with public transportation in the modal split, it remains a secondary mode of transportation, lagging behind individual transportation and buses. Due to the high running costs, fare prices alone cannot generate enough income to support the rail system. Therefore, additional funding is necessary and stations are designed to incorporate additional commercial space. Thirdly, although the focus was placed on providing as extensive a train network as possible during the post-war period in both East and West Germany, since the 1990s, and because of the new privatized management structure, the focus of the *Deutsche Bahn AG* seems to have shifted to optimizing the economic performance of the system.

Discourse on urban space concepts

The perspective on urban space has moved away from a singular focus on technology towards a qualitative understanding of intra-related economic, social and spatial processes. A prevailing criticism of the transport infrastructure in planning circles relates to its segregation, fragmentation and functionalism. With this development the perspective on urban space is shifting from an 'holistic' view, such as 'master-planning´, towards the recognition of fragmentation, the process-dominated character

of urban development and the particular 'place' for social and economical development. In this context, the everyday life routines and re-appropriation of space by city dwellers and different user groups are considered essential aspects of urban spatial development and significant for the understanding of how behavior shapes the urban space and the 'place'. From a design perspective, this means a shift from the form-based approach to the acceptance of hybridizations when space needs to meet different (social and economic) demands.

Discourse on the emerging urban transportation space

The practical development of urban transportation space points towards relational development between the areas of transportation, commercial and urban development (industrialization/ railway as an important socio-economic urban point / Fordismus / marginalization of railway due to car-orientated development). Transportation areas have recently experienced a growth in commercial activities and at the same time a shift from correlated production process to consumption strategy, in line with the 'service-based society´. In this context, train stations are key-points—'hubs´—for transportation and commercial development have been reshaped by the inclusion of shopping malls in their design (with a unique logic of signage and forms, enclosed spaces under surveillance). Nevertheless, this strategy is refurbishing the former marginalized train stations (e.g. in Germany '*Projekte 21*'). Besides the commercialization of the station (since 1990s) other projects have begun to redevelop infrastructure space, such as large road and rail projects, which were seen as barriers—physical and visual polluters—in the urban environment, to infrastructure space which offer more than their former singular transportation function. One of these trends is the redevelopment of the old infrastructure as Flagship projects (e.g. the *Highline* in New York, *Promenade Plantée* in Paris) or the development of new project strategies (e.g. *Almere, Eurolille, South Access Amsterdam*). These projects serve as catalysts for further cultural and economical development, generating a new image for the area. However, architects and planners claim that the shortcomings in transportation projects stem from the non- interdisciplinary approaches to infrastructure planning and conscious design.

2.3.1 Clarification of the term: Urban transportation space

While agents of change can be identified in the transportation, urban and commercial dimension on the transportation site, the theoretical discourses in the reviewed fields

reveal essentially field-specific perceptions of urban transportation space. From the theoretical discourse, urban transportation space can be understood as a space of competing concepts, where every professional field demands something different one of a site that develops as a correlational process. This means in detail:

Competing concepts on urban transportation space

Urban researchers understand urban transportation space as being developed under particular urban conditions, highly specialized by transportation and economic functions and demands. For *urban designers and architects*, urban transportation space challenges former perceptions of the spatial and morphological continuity and mixed uses of the traditional city. For these groups the potential of urban transportation space lies in its "upgrading" from the mono-transportation use to mixed-use by different user groups. *Sociologists* and *anthropologists* define urban transportation space as a *'non-place´*. It is mono-functional, based on spatial concepts related to abstract technical functionality and developed for a few specific user groups. Access to the urban transportation space is limited because of ticket fares and the specific transportation use. *Transportation planning* within the urban transportation space concentrates on the development and perfection of the network and to specific points, such as the stations as concentrated network points for intermodality. These specific points serve to meet specific services and are important nodes in the urban space. For *commercial and economical development strategies*, the urban transportation space reveals new commercial possibilities. These strategies are implemented under the pressure to produce a commercial profit and still exhibit the need to incorporate individual car use by including parking areas in stations and their surroundings (*Park & Ride*).

Emerged correlated development of the space

Nevertheless, the reflections on the practical development of urban transportation space and urban conditions, in the industrial and post-industrial society, show evidence of the correlational development between the three areas of transportation and urban development, and associated development of commercial strategies. This means that, in the relationship between transportation infrastructure and urban space development, mobility concepts have been the basis for urban models and development since the industrial revolution, first through therailway and later through cars. Meanwhile citizen and their particular practices have been constantly changing the development of the

particular transportation site. Through this development, a third component becomes essential to the formula—commercial dynamics related to mobility and transport infrastructure. Thus, clusters of commercial and manufacturing units developed close to transportation nodes during industrialization and recently, consumption areas have sprung up close to stations or even within their interior spaces.

While the correlative development among the mentioned fields becomes apparent, the individual elements among them reveal tension in the understanding of the infrastructure site and the struggle among competing concepts appears. Hence, the context of the dialog and the relationship between the development of the transport infrastructure network and the urbanization process remains an underexposed aspect of the urban planning field and a topic that needs to be better understood.

2.3.2 Hybridization and fragmentation as conceptual framework of research

Few authors have conducted research efforts to conceptualize urban transportation space in terms encompassing more than a single definition—as a space that emerged from conflictive understanding and competing concepts and as a key element of urban development in the urban space.

One of them, Marcel Smets (Smets 2006:2), defines the essential condition for understanding and researching urban transportation space in his research. In summary, Smets´ focus has been to research the infrastructure project beyond the potentials of transportation logic as an urban development strategy in Europe.[38] In this context, Smets argues that the aforementioned conflictive understanding of urban transportation space emerges from the lack of integrated transportation planning conditions by multidisciplinary teams: The transportation project proposal in fact shows a confrontation between the 'abstract' transportation network approach and the particular urban conditions. It is a spatial development process that can be described as a clash, emerging from different urban conditions, the approaches of various actors and the transportation network logic. Therefore, a broader point of view is required to provide the proper conditions to effectively research this kind of space and its conditions and potentials. Then the transportation infrastructure can be investigated in

[38] See Smets' compilation of transportation infrastructure projects in Europe, in the 'Atlas on Contemporary Landscape of European Infrastructure' in 200199 and Acker/Smets/Meulder's work on 'Conceiving Infrastructure as a Mode of Urbanism' in 2006 for the Belgian coastline, the Walloon coal basin and rural Campine.

terms beyond its functional transportation status and considered as an inclusive urbanization project (Smets 2006:2).

In his research, Smets introduces the term **hybridization** to describe the process of urban transportation space development. Smets' research has shown that significant changes to the former concept of transportation space have emerged and suggests that this reveals a negotiation and reevaluation process between the transportation planning and the urban conditions during the implementation phase of each plan. Smets defines hybridization as reciprocal change, showing that changes to the former transportation planning are accompanied by typological developments in the surrounding urban space. In other words, the transportation project shapes its surrounding landscape with a footprint and vice versa, producing a particular spatial typology that is the result of the interaction of different interests.

The view that urban space is a product of hybridization—the result of negotiations between the claims and needs of different interests in a given space—can also be found in the urban design research, 'Space of Conflicts´ by Kess Christiaanse. Christiaanse argues that a particular spatial organization emerges from the mutual confrontation of different interests in the urban realm (Christiaanse 2004:1-4). Bertolini (focusing his research on recent station redevelopments and their specifics) underlines Smets' and Christiaanse's hybridization arguments and introduces the topic of the ambivalence of this space as the driving motor of its transformation. Bertolini defines the station as the intensification of flows, an accumulation of activities, and a tangle of actors (Bertolini 1996:331). He finally defines the station as a node and a place at the same time.

A second term related to the particularities of urban transportation space and its complex nature is **fragmentation**. Scholars (Asher 2004:25-35; Bourdin 2002:67; Castells 1996:45) stress the development of particular urban conditions through transportation demand. The resulting spaces feature central nodes of high mobility and commercial activity and no geographical constraints—fragmented spaces only loosely related to the adjacent areas. The construction of non-integrated areas, which existing independently by concentrating people and activities, accompanies their development. In addition, Bourdin argues that individuals or groups use these areas in specific ways. The space is fragmented because of the functional and spatial mixture that results from adjusting to transportation requirements and related urban developments. New social and spatial patterns are emerging, calling for new interpretations of the urban

phenomena of urban transportation space. Key points in the research on the specifics of urban transportation space are in summary:

a. the pattern of transportation space planning

b. the particular urban conditions

c. the process of emerging conflicts, negotiations between concepts and actors, and use patterns

d. the resulting development of specific urban transportation elements, such as the station, the railway or highway line

In conclusion, the research reveals that urban transportation space development can be conceptualized as, the urban transportation space should be understood as a hybridized space due to the increasing spatial specialization of transportation development and practices by urban dwellers and as a fragmented space loosely related to adjacent areas.

Despite the aforementioned research activities on the subject of the correlational spatial development of the transport infrastructure network and the urbanization process, a central **research gap** can be identified.

The spatial development(s) in regard to the urban transportation space and its social-urban characteristics has not been fully investigated. It needs to be stressed that the research on the theoretical framework and urban transportation space has revealed that in addition to the interplay between transportation space plans and urban space context associated commercial activities form a third element in the hybridization process. Researchers such as Smets assume the hybridization of urban transportation space emerges from two elements: urban context and transportation planning. However, the research on the practices of transportation development (see 2.2) reveals that the process of hybridization is related to commercial activities such as the social-spatial configuration of the station and its station square during industrialization and, more recently, consumption strategies in the stations. Projects such as railway stations exhibit a strong direct influence on the local urban economy in their function as central inter- and intra-city nodes.

Different qualities of space: While scholars such as Smets, Asher and Bourdin argue that the transportation space reveals patterns of hybridization and fragmentation,

questions about the different qualities that this particular space may hold remain unanswered. Lefebvre‘s research on the development patterns of urban space instead suggests that hybridization is a process that derives from every development (which Lefebvre refers to as genesis) in the urban space.[39] Hence, Lefebvre questions about the qualities of hybridization and suggests that the space patterns produced by hybridization can be different, through the distinction of dominant space and appropriated space.[40] Interestingly, Lefebvre made this distinction on hybridization while researching the spatial conditions of the street. The concept reveals its meaning in contrast to appropriation – this space is modified in order to be inhabited by citizens and their needs. Ideally, streets can be transformed, but then they need to be appropriated.

Therefore, it needs to be stressed that the urban transportation space has to be further investigated because it should not be assumed that its spatial expression is a prototypical product of a standardized dialog between the transportation concept and the urban space. Its specific spatial expression can vary due to the different interests related to it and the development between the factors of transportation provision and urban development and commercial interest.

The urban transportation space consists of different elements: It is noticeable that a magnitude of the research on urban transportation development is based on the station and more recently on the ‘hubs´. The focus has widely been on their transportation and commercial strategies. However, a limited amount of current research refers to social spatial development patterns (e.g. Bertolini 1996; Wucherpfenning 2006; Peters 2009). Nevertheless, the line represents a very different physical dimension in the urban space than the station node due to the barrier effects of its physical shape. Its development potential continues even when the transportation facility and the stations have been removed, as observed in the case of the *Highline* in New York or *Promenade Planteé* in Paris. Additionally, in the ‘*Atlas on Contemporary Landscape of European Infrastructure*’ Smets relates his research to the infrastructure line, particularly to urban highways. He illustrates its spatial development potential through the examples of cases such as urban parks and sport facilities under the infrastructure lines. The research on railway development needs to be extended to encompass more

[39] See page 40, Lefebvre´s definition of hybridization

[40] Ibid

than the specific development of the node. In addition, other railway elements, such as the lines (viaducts), have been paid relatively little attention in terms of academic research and of urban design. There is no clear concept in Berlin's planning and urban research circles or comparisons with national or international case studies.

2.3.3 Research Assumptions

This research work is based on the following main assumptions:

1) Research on hybridization and fragmentation: It assumes that due to the complexity of the urban transportation space, the spatial expression cannot be researched from a single point of view (e.g. transportation development). It assumes that by researching the hybridization and fragmentation process as well as the factors and mechanisms for their emergence and development, the key driving forces for the development of the urban transportation space can be identified.

2) Qualities of the urban transportation space can vary: The development of urban transportation space is considered to be a process shaped by key elements such as the transportation and urban planning and particular commercial context, the process of emerging conflicts and negotiations between concepts and actors. Therefore, the space has particular (socio-spatial) qualities and diverse urban transportation spatial types coexist. It is assumed that by researching the specific qualities, a range of spatial expression in the urban transportation space, related to the interaction between the factors involved in the development of the space (such as transportation development related to the technical and network character, specific commercial and social-urban conditions of the particular site) will be revealed.

3) Different elements and their potentials: Different elements in the development of the urban transportation space e.g. the network, the station and the viaduct are assumed to have their own particular potential and contribution to the overall conceptualized urban transportation space.

2.3.4 Research questions and hypothesis

The research gap and the assumptions lead to the following central research questions for the following research on the case of urban transportation space of the Stadtbahn in Berlin:

- How do hybridization (negotiation and confrontation)/ fragmentation (spatial consequences) processes characterize the emergence and development of space created by the Stadtbahn?

As specified in the key points on the process of hybridization and fragmentation, transportation elements such as the network, the (viaduct) line and nodes (stations) have their own specific spatial development patterns and potentials. Therefore, the research on the different elements and their interrelationship is essential to understand the characteristics, problems and possibilities that the Stadtbahn case and its elements present. The specific research questions targeting these elements are viaduct and arches related:

- What kind of location is the viaduct space in terms of hybridization and specific spatial development and emerging (social-spatial) qualities?
- What social-spatial role do the viaduct and the arches play in the transportation space?
- How are developments such as the 'Renaissance of the railway station' affecting and changing the viaduct and its role of providing the point of interconnection between the railway space and the adjacent areas?
- What role does commerce play, and how does this affect the viaduct and the 'Bahnhofsviertel'?
- How is the process of emerging urban development such as flagship projects and 'place-making' changing the arches?

The following initial hypotheses are underlining the above mentioned research questions:

1. The social-spatial Stadtbahn space illustrates social life through structures and processes, and is influenced and shaped by the practices and complexities of the urban realm, such as the processes as hybridization and fragmentation. In this context, the viaduct's development process is linked to the associated transportation network, the specific urban context and related commercial activities.
2. Commercial activities are influencing the predominance of former activities such as manufacturing and workshop activities in the viaduct through the new demands of the service sector.

3. The economic focus of the privatized transportation management structure and the move from network extension to network optimization are altering the relationship between the railway elements (viaduct and station) and their intersection with the adjacent urban area.

4. The (socio-spatial) qualities of the urban transportation space can be developed at specific sites and in different degrees from clear spaces defined by 'integrated´ transport functions and commercial strategies to spaces particular to local conditions developed by users employing tactics.

2.3.5 Research procedure

The focus of the research and the overall contribution of the research will be to provide an in-depth understanding of the case of the Stadtbahn and its viaduct, arches and network through the concepts of hybridization and fragmentation. This will be realized by researching the specific patterns of concepts and development processes, as well as the problems and urban qualities of its spatial development.

A first aim is to enrich the current debate among scholars on the potentials and dynamics of urban transportation by studying a case where firstly the relationship between the infrastructure facility, its viaduct and the development of the urban space has a long history. Secondly, the case is currently undergoing restructuring and emerging developments as 'HUB's' and new arches development in terms of transportation provision, urban development and commercial dynamics. These points of view provide the following objectives:

- to understand the infrastructure plan of the Stadtbahn project itself—including its history, implementation, problems and performance—taking into account its transportation, urban and commercial implications for Berlin.

- to understand with the study of the Stadtbahn the changes in the meaning of urban transportation space in terms of changing social-spatial and commercial context in recent development .

- to provide an understanding of urban transportation space dynamics and qualitites in terms of historical development and its current shifting state.

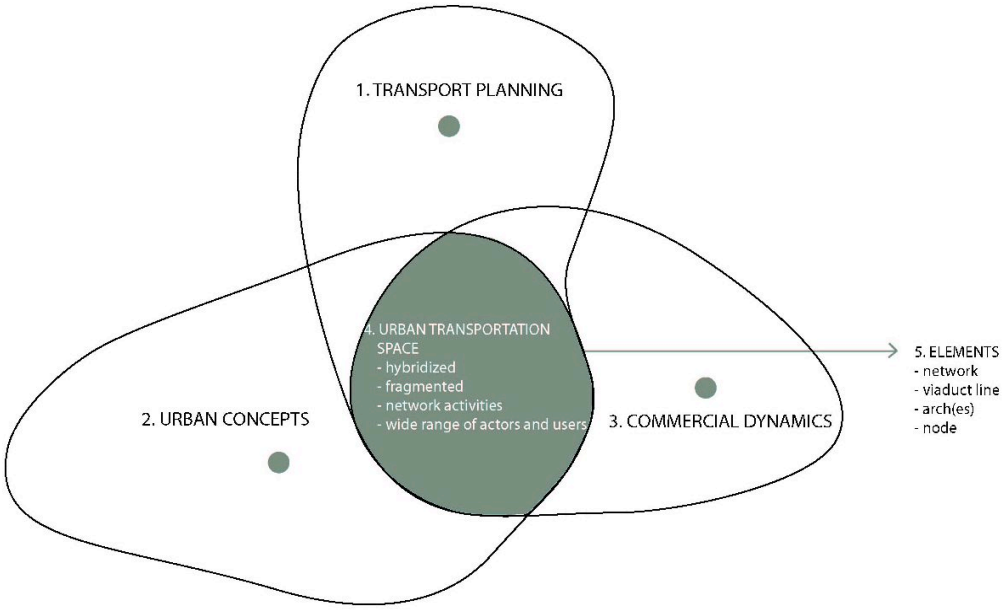


Figure 2-8 Specific research procedure showing the five research aspects (drawing by the author)

The **specific research procedure** is based on the development of the urban transportation space of the Stadtbahn in Berlin. It is aligned to the aforementioned concepts of hybridization and fragmentation and the key elements of the transportation space planning, the particular urban conditions and commercial dynamics, and the process of emerging conflicts between concepts and actors.

The first research aspect (Point 1, see Figure 2-5) is the mapping of the transportation-planning concepts of the Stadtbahn. Aligned to the discourse on transportation concepts, it provides the understanding of the planning, its implementation, strategies and changes in infrastructure demands. It also reflects on the changing dynamics of transportation provision strategies and the management of the project with the introduction of a PPP- Structure (with the *Deutsche Bahn AG*) to the historically public managed railway provision.

The second and third research aspects are the analysis of urban concepts (Point 2) and commercial dynamics (Point 3) related to the Stadtbahn project and aligned to the current discourses on urban development and commercial dynamics. The discourses reveal the new demands on specific nodes in the urban space, their urban and commercial potentials and related problems.

The fourth aspect is based on empirical research and focused on the process analyses of the project development, the confrontation, the negotiation of concepts with the

existing urban context and commercial dynamics—the hybridization—of the Stadtbahn transportation space (Point 4). It reveals the dynamics in the relationship and outlines how the infrastructure planning approaches have been inserted into the urban space and to whiat extent the space induces particular spatial configurations.

The fifth research aspect (Point 5) is focused empirically on the specific development of the viaduct and contrasts its development with the emerging trends in the stations and their squares. This topic concentrates on the interface between urban development and the patterns of interaction between transportation development, urban context and economic dynamics. Therefore, the research examines how city dwellers transform the transportation space through their daily practice and how particular actors build the space. This research topic also studies the alternative viaduct developments (in three case studies) and their urban impacts as well as the scenarios of social conflicts and the role the viaduct plays in these processes. The research reveals the structural potentials, transformation mechanisms and successive changes in the relationship between the transportation demand, urban context and commercial activities.

3 METHODOLOGY

The relevance of analyzing the process of hybridization and fragmentation in order to study the development process of urban transportation space was identified in the previous chapter. Chapter 3 will introduce the methods applied to this research, offering an overview of the methodological considerations and specific procedure. Four main parts are discussed in it: Firstly, the section 'Research on the term 'space' with the section '*Aktionsraumforschung*' serves the purpose of setting the methodological framework for the research and laying out a general methodological approach. The case study selection discusses the pertinence and relevance of the cases to be studied. Finally, the section 'methods of data collection' organize a toolkit for obtaining the relevant data. Next, the development and specific research procedure of two research phases are described, one under the heading 'Research on the hybridization processes' and the second on the 'Qualities of the fragmented space'. Its limitations are outlined in the section 'Limitations of the research'.

3.1 Conceptualization of 'space'

The term 'space' is defined in this work as a social product incorporating the simultaneity, heterogeneity and juxtaposition of interactions of the social and spatial realm. It has a process-related character, assuming social changes within the built environment. [41]

In this context the term 'interaction' has been considered along with the physical analysis and the analysis of social patterns, such as those of actors and users, and perceptions of the infrastructure space. Firstly, to complete studies in the realm of urban design regarding transportation infrastructure (e.g.the potential of the railway line to connect with the adjacent area or on how 'interactive' it is with the urban space) remain based on the analysis of space morphology, which eather assumes an 'interaction' between the transportation infrastructure and the urban context or 'isolation'. Secondly, in social studies scholars as Bourdieu calls to understand the nature of 'space' for a stringent analysis of the interrelation between physical space, and 'appropriated space´ referring to the social context (Bourdieu 2005, in: Macher 2007:72).

> *"To break away from all the false plausibilities and significant misjudgments of places, one most employ the most stringent of analyses in viewing the interrelation between structures of social realms and those of the physical realm." (Bourdieu 2005, in: Macher 2007:72)*

In this context, the relationship between the city dwellers and the infrastructure space will provide an account of the quality of this space in terms of interaction and particular space production patterns.

Lefebvre even refers to the qualities of urban space through the distinction of dominant space and appropriated space. The former is by nature dominated by technological intention and political power and is inherently mono-functional and enclosed; the latter is diverse and adapted and modified to the everyday users' needs. Ideally, spaces can be transformed, but then '*they need to be appropriated'* (Lefebvre 1991:163). This discussion provides a better understanding of how the urban transportation space is used in daily life and of the perception of 'users´ and the participation of 'actors' on the

[41] This definition derives as synthesis from the work of Lefebvre to the production of urban space (1991)

emerging relationship between transportation infrastructure, urban and commercial context.

3.1.1 The 'Aktionsraumforschung'

Aktionsraumforschung (action space research), by Riege and Schubert is a technique that properly corresponds with this position on 'space' (Riege, Schubert 2005, in: Macher 2007:20-24). The method derives from social and spatial research in the German context and is used in the realms of planning, architecture and physical space related social studies, where the survey on spatial qualities and activities are an important subject matter. The foundation of the method is based on the work of Lefebvre, the theories on the production of social space and the concept level as physical and mental representations of space. *Aktionsraumforschung* evaluates patterns of actions and incorporates the mental aspects of representation--as stressed by Lynch in the work to the 'mental map' (Lynch 1960). The perception of dwellers on the image of the city provides a better qualitative understanding. However, in Riege and Schubert's opinion, the repertoire of social analyses methods shows a significant weakness in ensuring empirical data and recognizable and accurate results. The methods of *Aktionsraumforschung* therefore include zoning and mapping (*Social Area Analysis*) and the analyses based on qualitative evaluation, such as the mental map or qualitative interviews, enhancing this method also for architecture and planning research. The methods also include quantitative methods, which use questionnaires, counting and quantitative interviews. The specific method produces a wealth of data, which helps describe the development of 'space´ in terms of:

a. The research on the physical context of the given space

b. The relational space:

- the lived space by the use patterns in the area

- the perceived space

- the conceived space, the relation between actors

(b: is elaborated through counting and qualitative interviews as well as questionnaires)

The focus of *Aktionsraumforschung* is on the operational schemes of a specific space. According to authors from the field of social studies (e.g. Macher 2007), the results

may be limited because the data can not be generalized—socio-spatial behavioural patterns can also derive from opinions, feelings and symbols. However, it does serve as an additional support to the body of research.

3.2 Case study selection

The research is organized in two different phases, in accordance with evaluating the process of hybridization and to contrast the particular spatial findings with the research on urban qualities found in the viaduct and arches: the development of the Stadtbahn as transportation space in Berlin (Chapter 4); and the social-spatial development of the viaduct arches between appropriation and place-making (Chapter 5).

The case study research is based on the methodology formulated by Robert K. Yin. Yin's method accounts for a variety of sources of case study data to perform an in-depth examination of the case within its 'real-life context' (Yin 2004:2). The complexity of the case-study research and the intention of comparison require, firstly, the structuring of data selection and the introduction of research steps to provide what Yin introduces as the method of successive evaluation during the collection of data (Yin, 2004:5). Secondly, to strengthen the findings the cases are chosen as contrasting comparisons and hypothesized variations. Having more cases helps to strengthen the findings from the entire study. The purpose of a contrasting comparison is to '*triangulate*' (Yin 2004:10) within the established research through a variety of case-study data and to converging lines of evidence with the selection of the research cases. Nevertheless, this also necessitates a decision about which parameters will be applied to select the cases. In this research, the methodology was applied for the variation between the transportation infrastructure and urban planning, associated commercial activities and the specific urban context. The contrasting comparisons encompass temporal evaluations as well as variations between the elements in the current emerging development of the Stadtbahn transportation space. Therefore, the case has been organized in two aspects:

1. Hybridization (Chapter 4)

Cases have been selected in order to research the development of the hybridization (negotiation and decision-making) process. Three key stages in the Stadtbahn's development have been selected for study[42]:

1873 – 1910 (4.1) The first case-study period encompasses the last decades of the 19th Century, detailing the Stadtbahn implementation process and its first dialog with the urban life of Berlin. The research reflects upon the situation of the Stadtbahn as a new technical artefact in the urban fabric during the industrialization. It depicts how Berlin's rapid growth was steered by the pattern of railway development.

1961 – 1985 (4.2) The second period is defined by the division of the city and its consequences for the transportation system, as well as the changes to the system during the political division of the city after 1961. The disconnection caused by the *S-Bahn* boycott in West Berlin created both physical and functional effects significant for inhabitants' and stakeholders' positioning towards the Stadtbahn.

2000 – 2009 (4.3) The restructuring of the system after the 1998, the '*Bahnreform*', the change of management to *Deutsche Bahn, AG* and new planning concepts for transportation and urban space define the third period.

[42] In order to classify the Stadtbahn steps of development a periodical classification of this period is needed. Reviewed sources (Knödler-Bunte(1984),) support a categorizing of the main Stadtbahn developments in the following time table:

I	1873 – 1890	Initial project, implementation process in the urban fabrik of Berlin
II	1919 – 1933	Modernizing project, electrification of the system
III	1934 – 1939	Development of the Stadtbahn under the guidance of National Socialist urban planning projects (Olympic Games, urban city development of north south and west east access)
IV	1946 – 1961	Division process of Stadtbahn system into two parts in correspondence with BRD and GDR territories.
V	1962 – 1989	Time of functional division of the Stadtbahn system. Change of functional character of train station and viaduct.
VI	1989 – 2006	Restructuring process of the train system with the redevelopment of main city stations (Friedrichstrasse, Lehrter Bahnhof, Alexanderplatz) and adjacent urban areas.

The system extension period from 1934 to 1945 with the inclusion of an underground north-south train connection to complete the system's intersecting cross-like formation remains of lesser consideration for this work. Because the development of the train system was to its north and south line, the extension did not significantly affect the west-east Stadtbahn line and the viaducts.

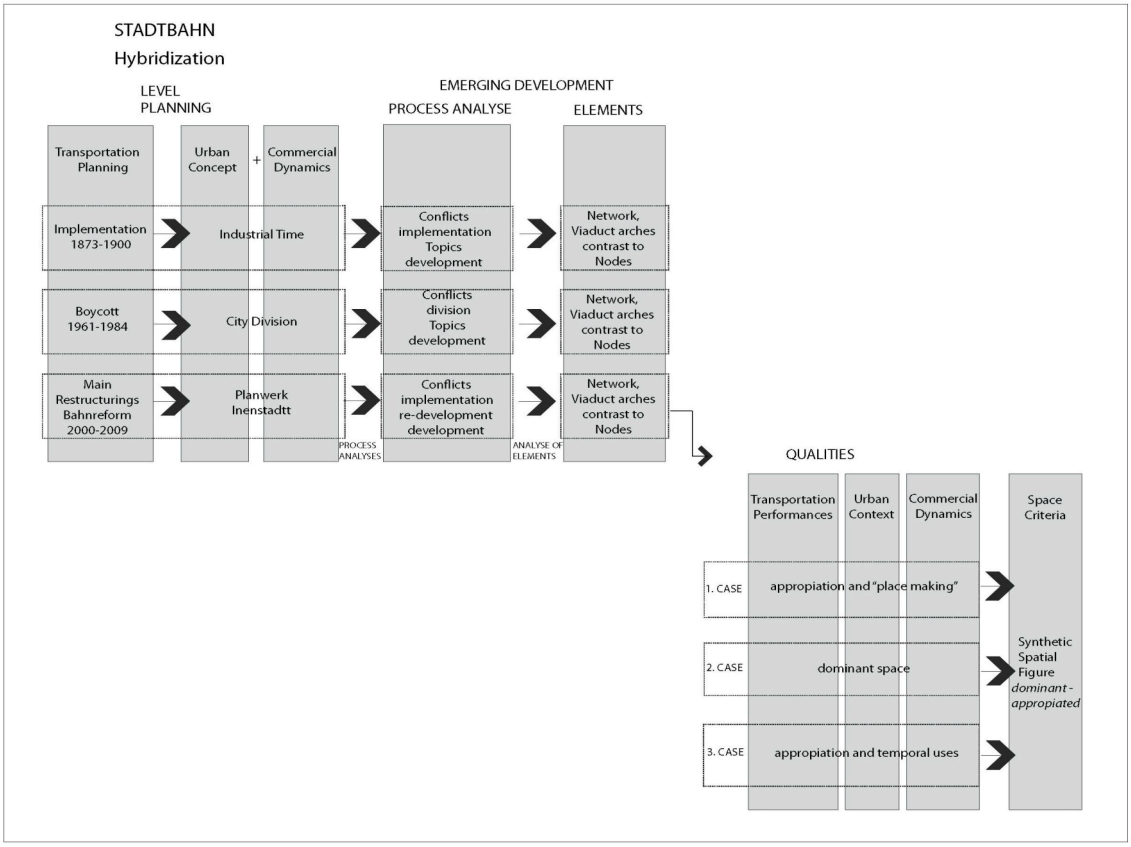


Figure 3-1 Research Phase 1 (Hybridization) and research Phase 2 (Fragmented Space and Qualities) with the own individual stages

2. Fragmentation (Chapter 5)

The selection of cases for the second phase of research on the emerging qualities of the fragmented space is crucial in terms of investigating possible variations of the relationship between the three elements of transportation space planning, urban practise and commercial activities. Therefore, based on the results of the 1st Phase (Chapter 4), three cases were selected for an in-depth qualitative research. They were strategically chosen to reveal the potentials of the viaduct structure and also to illustrate particular development trends related to the urban-commercial context. The cases are:

Case 1) The dominant transportation space: Partial removed viaduct space, the hub and urban surroundings resulting from recent development impulses: The area of the *Hauptbanhof* (Central Station)

Case 2) Appropriation and 'place making': The multi-use viaduct space, small station (*Verkehrsstation*) and dense urban surroundings: The area of the *Savignyplatz*

Case 3) The appropriation of space by creative and small scale entrepreneurship: Temporary viaduct development, interconnecting station *(Jannowitzbrücke)* and conflictive urban development process: The north area of the *Obere Stadtspree*

3.3 Methods of data collection

The data collection methods follow the principles of *Aktionsraumforschung* and are based on the key points of the research:

a. Concepts of transportation and urban planning

b. Commercial and urban dynamics

c. The process of emerging intra-related conflicts (hybridization)

d. Specific social-spatial space 'production´ with the network and railway elements spatial developments of the elements such as the network and the viaduct-line and in a further sense the nodes, the station and the square

The 1st Phase of research: Hybridization (Chapter 4) was completed with historical data, plan documents and cadastre information as well as qualitative data from secondary literature (Sections 4.1, 4.2). Because the third case for the research on hybridization (Section 4.3) studies the actual emerging Stadtbahn space, current data was used. This was based on contrasting public newspaper articles with information from stakeholders and scholars' debates on the conflicts in the project development of the Stadtbahn.

Newspaper analysis included research in popular city magazines and newspapers published between 1998 and 2006 (*Berliner Zeitung, Die Welt, Berliner Morgenpost*). Over 30 newspaper articles were evaluated, along with 10 scholarly articles and 10 DB publications dealing with the main Stadtbahn-related topics. Some examples were the construction of the main stations and the development of the viaduct in the most highly frequented spaces like *Hackescher Markt* and *Savignyplatz*.

Research on the Stadtbahn space has been compiled into a data matrix. It outlines the current context and gives an overview on the specific characteristics of the correlation between the rail system, the urban development and commercial activities. The matrix displays the analyses of the Stadtbahn transportation space incorporated in the dense (central) area of Berlin defined by the existence of the viaduct (between *S-Bahn* stations *Charlottenburg* and *Ostbahnhof*). The investigated area was extended outwards towards (two stations) *Westkreuz* and *Ostkreuz* stations, where the connection between the Stadtbahn and the *Ringbahn* is made, in order to investigate the performance of the Stadtbahn line and the stations with relation to the *Ringbahn* structure. This includes statistical data, morphological and use analyses of the viaduct, the stations and the adjacent areas.

Interviews consisted of three different questionnaires and qualitative interviews. The first was designed in 2006 to analyze broader topics related to the Stadtbahn and the publicity generated around the stations and viaducts. This also fulfilled the purpose of investigating which stations and viaduct areas were well-known, and how often they were frequented and what the perception of urban dwellers was regarding the transportation design of the Stadtbahn system.

As a **specific interview form, the mobility diary** was introduced as a research instrument in 2009. The residents of two different buildings in Berlin (*Charlottenburg* and *Kreuzberg* were asked to keep a research diary for one week. These sample populations were chosen due to the mix of occupants (this may not be a representative selection). In total, 20 diaries showing the daily routine of people and the way the Stadtbahn was incorporated into their routines were evaluated.

The 2nd Phase of research: Fragmented Space (Chapter 5) elaborated on the different spatial qualities of three specific viaduct sections and their surrounding and was completed mainly with information gathered from field research. This was complemented by current data, plan documents, cadastre information, and qualitative information from secondary literature. The issues were the planning concepts (transportation and urban and associated commercial dynamics), emerging viaduct development and the specific characteristics of the arches.

The counting surveys were conducted as part of the three in-depth case studies. Data was gathered during four different time periods (twice on weekdays, twice on the weekends) at three defined times of day (mornings from 8-10, afternoons from 4-6 and evenings from 8-9) over three weeks.

The third questionnaire (one and two were used in the first phase of research) outlined the three specific areas of investigation regarding the uses of the spaces: a) individual profiles (age, place of work/ residence) b) individual perceptions of the given space and c) activities in relation to the given space. The final step of the interview process was to interview stakeholders, scholars and renters of the viaduct arches in the given spaces concerning the Stadtbahn. To support the resulting data outcome of the *Aktionsraumforschung*, qualitative interviews were conducted in the in-depth section of the research (Chapter 5). Interviews and personal communication were conducted with stakeholders involved in the process of developing the Stadtbahn (*Deutsche Bahn AG, Station & Service*), scholars contributing to the design of the Stadtbahn stations, employees of the urban planning ministry in Berlin, users in the given areas and those renting the viaduct spaces (in total 17 qualitative interviews and several personal communications with stakeholders (see: List in References, p. 287)).

3.3.1 Structure of the field research and evaluation of data

Field studies were conducted during three time periods: October 2006 - April 2007; April – July 2008 and October 2008 - April 2009. The author also directed and supervised three courses at the Technical University of Berlin (see Annex) where students researched the topics of mobility and its consequences for urbanization. In a second step, the focus of research with students was placed on the public transportation system in Berlin and on the Stadtbahn in particular, to support the project. The author and students conducted interviews, analyzed various publications and produced maps of the existing social – spatial development of the Stadtbahn area. Through this research three unpublished booklets have been developed (see Annex for work outline).

The obtained data was analyzed using statistical analysis software such as SPSS. In order to visualize and check the results this was then adapted into a layer model (Läpple 1991, in: Macher 2007:27) in which layers of research and their evaluation (based on a 1-10 scale for the differentiation of accumulations of probability) are stacked so that their occurrence can be calculated based on intensity levels. From this, layers can be contrasted in a second step to create morphological and functional manifestations of the physical space and observe interaction and operational structures. The layer model has the ability to provide a unified representation of evaluated data and to provide information, in this instance, on the intensity of

interactions and the patterns created by the transport system and their spatial and social contexts.

3.4 Specific research phases

3.4.1 Research on the hybridization process

As mentioned above, the first phase of the research (Chapter 4) is aimed at clarifying the process of hybridization in the case of the Stadtbahn. The methodology for the study and assessment of the hybridization and specific space qualities adopted the structure of Acker, Smets, Meulder in 2006 on how to conceive of infrastructure from the urbanism perspective for the Walloon coal basin and rural *Campine* on the Belgian coastline (Smets 2006:2) and reframed it to this research case with the following specific research focus:

- The planning concept (transportation and urban concepts and associated commercial dynamics)
- The process of emerging intra-related conflicts between the planning concepts and the urban context, its specific topics and changes to the development structure of the project and the urban space (incorporating associated commercial activities in the research).
- Specific development of the network and the rail-elements as the viaduct-line and arches are further contrasted with the trends researched in the stations its fore square.

The research was framed to account for different development patterns from a historical revision and the actual emerging viaduct development. The focus of this research is to chart the main changes of the Stadtbahn space in a comprehensive compendium, along with the three chosen case studies as explained. Stage 1) covers the time of Stadtbahn implementation process and its first dialog with the urban life of Berlin during the last decades of the 19th Century. (4.1, 1873 – 1910); stage 2) discusses the transportation system as well as the changes to the system during the political division of the city after 1958. (4.2, 1961 – 1985); and stage 3) elaborates on the restructuring of the system after the 1998. (4.3, 2000 – 2009)

The research is thus organized under the headings Planning Concepts, Process Analyses, Railway Element Analysis and development Analysis, according to the following research procedure:

1. Planning Concepts: To reflect on the (transportation and urban) planning concepts and its urban context and associated commercial dynamics:

a. The transportation planning: The planning proposals and main transportation issues related with the traffic and mobility demand with the sub criteria:

   - The focus of the planning concepts, such as the design of the railway system for particular services (e.g. rail-based passenger service, inter- and intra city traffic), the network structure in the planning proposal as the network concentration (central station or intermodality). The management structure of railway provision (as government-led public ownership, private public partnership).

b. **The urban concepts:** main urban planning concept and context related to the Stadtbahn space, associated to:

   - Main relevant urban concepts and development design

c. Commercial dynamics: main characteristics of commercial proposals for the development of urban transportation areas, associated to:

   - Key-structures of the commercial dynamics, such as commercial interest in the station (strategies based on service and consumption) and viaduct area, expected increase of land value commercial strategies ('station formula' – see 2.2.1)

2. Process Analyses: Research on the process of transportation space development —conflicts, dynamics and decision-making (hybridization):

a. **Topics and dynamics of the conflicts:** The key elements of struggle, such as during the land and exppropriation, the implementation phase and the design of the stations to cope with the transportation network demand.

b. **Study on the Stadtbahn process of space development**: Research on the solutions and social variables involved in the participation and negotiation process of the Stadtbahn development.

- The transportation performance
- The emerging urban development of the Stadtbahn area
- Associated commercial activities

According to the empirical research methods for the current emerging development, Stage 3. (The restructuring of the system after the 1998. (4.3, 2000 – 2009) the research encompasses:

- The morphological characteristics of the space
- The (lived space) urban dwellers routings in reference to the Stadtbahn
- The (perceived space) urban dwellers perception on the Stadtbahn
- The (conceived space) relationship between actors during the development of the Stadtbahn

c. The commercial activities in the Stadtbahn areas

3. Railway Element Analysis: Discussion of the particular patterns presented by the network and railway elements and the 'production' of urban space

a. **The network character of the Stadtbahn**: Research on the transportation, urban and commercial effects related to the transportation network development in Berlin.

b. **The character of the viaduct**: The development of the viaduct and its specific role in the urban space as follows:

- The social-spatial and functional role of the viaduct and the arches as well as their role in the project development
- The characteristics of uses in the viaduct space

c. **The contrast to the station and its station square**: To define the role of the viaduct in comparison with the tendencies revealed in the station and the station square (such as the station backside of foreside development)

4. Summary and comparison: The particular pattern presented in the transportation network, the urban and commercial development in the Stadtbahn space and the actors involved in the process**.** The following table summarizes the analytic framework for the research on the hybridization process.

		SOCIAL PHYSICAL CHARACTERISTICS OF THE STADTBAHN SPACE NEGOTIATIONS AND SOLUTIONS/ TRANSPORTATION, URBAN, COMMERCIAL DEVELOPMENT Actors involved: Planners,Transportation Company, Developers, Investors, Users, Inhabitants, Visitors		
ANLISYS OF NETWORK & RAILWAY ELEMENTS	**_the viaduct _the arches _contrast to tendencies in the stations and squares**	**1. 1873 - 1910: Research on space: viaduct and arches** _the social - physical space urban space _the adjacent area - transportation, urban and commercial development	**2. 1961-1985: Research on space: viaduct and arches** _the social - physical space urban space _the adjacent area - transportation, urban and commercial development	**3. 2000_2009: Research on space: viaduct and arches** _the social - physical space urban space _the adjacent area - transportation, urban and commercial development
PROCESS ANALISYS	**Hybridization (conflicts)**	**Conflicts: Topics and dynamics**	**Conflicts: Topics and dynamics**	**Conflicts: Topics and dynamics**
		Social variable and specific topics related to the project conflicts	Social variable and specific topics related to the project conflicts	Social variable and specific topics related to the project conflicts
		Dynamics and emerging urban space:	**Dynamics and emerging urban space:**	**Dynamics and emerging urban space**
		Social variables in the project development. Transportation outline, urban and commercial development of the urban space	Social variables in the project development. Transportation outline, urban and commercial development of the urban space	**The transportation performance**
				The social- physical context
				The commercial activities in the Stadtbahn space
				The relationship between actors
PLANNING	**Transport Planning**	Infrastructure Planning & Proposal	Infrastructure Planning & Proposal	Infrastructure Planning & Proposal
		Management Structure	Management Structure	Management Structure
	Urban Concepts	Main concepts and dynamics of urban space	Main concepts and dynamics of urban space	Main concepts and dynamics of urban space
	Commercial Dynamics	Main characteristics of the commercial dynamics	Main characteristics of the commercial dynamics	Main characteristics of the commercial dynamics

Table 3-1 Table showing the analytic framework for the research on the hybridization process

3.4.2 Research on fragmented space and urban qualities

In the second phase the intention is to research the fragmentation and its spatial (socio – spatial) qualities of the Stadtbahn with the specific focus on the role played by the viaduct.

Therefore, an in-depth research on select cases studies is planned on the micro level to contrast the results obtained from the first research phase.

Case 1) The dominant transportation space: The area of the *Hauptbanhof* (Central Station)

Case 2) Appropriation and 'place making': The area of the *Savignyplatz*

Case 3) The appropriation of space by creative and small scale entrepreneurship: Jannowitzbrücke and the north area of the *Obere Stadtspree*

The research is thus organized under the headings Social Area Analyses, The Routes of urban Dwellers, The Perception of urban Dwellers, A Space of varying urban Interest, according to the following research procedure:

1. Social Area Analyses: To reflect on the specific site development in terms of transportation and urban development with associated commercial activities :

a. Transportation development (as Transportation performance) in terms of

- Transportation layout of the specific station
- Transportation organization, such as the physical organization of transportation supply
- Network structure, such as the role of the Station in the transportation network
- Concentration of flows, such as the features of intermodality, interconnectivity and Park & Ride

b. Urban context in terms of

- Spatial characteristics in the area during daily operations, such as new space configurations, pathways to access the stations, destruction of the block structure, fragmentation of urban areas.
- The physical space of the area, such as its morphlogical development and the main characteristics as *passages*, *buffer areas* created with the viaduct and arches, station and station square

c. Commercial activities in the area in terms of

- Diversity and patterns of commercial uses in the area
- Location in the area, such as in the station inner area, the arches or buffer areas

2. The Routes of urban Dwellers: Research on the dwellers movements and patterns in the given areas with the questionnaires: personal questions, question related to the way they have reached the area and their perfomace in the space, such as

- Uses in the area by urban dwellers
- Patterns of microcirculation, to account on specific social-spatial patterns in the given space

3. The Perception of urban Dwellers: Research on the perception of urban Dwellers to the given area with qualitative interviews

- Research on space identification patterns, such as daily life, personal relation, through specific patterns as the viaduct façade or the station architecture

- Research on specific days and times to reveal patterns of uses and of perceptions

4. Space of varying urban Interest: Research on stakeholders' relationship in the space, conflicts and patterns of stakeholder relation

5. Evaluation and comparison of the social – spatial characteristics with SWOT-Anaylses

The following table summarizes the analytic framework for the research on the space qualities.

CASES / Characteristics of the areas through land price values and districts characteristics (density,		**Removed/ Walled Viaduct structure (Hauptbahnhof)**	**High/ Diverse Active Viaduct structure (Savignyplatz area)**	**Temporal active Viaduct structure (Jannowitzbrücke)**
Social Area Analyses	**Transportation Development** (as Transportation performance) functional parameters of the Stadtbahn project in response to network demands	**transportation layout:** distribution of transportation (levels), size of station		
		transportation organization: physical organization of transportation supply (interconnectivity with network)		
		network structure: the role of the Station in the Network		
		concentration of flows: features of intermodality, interconnectivity and Park & Ride		
	Commercial Dynamics displacement of commercial functions in the Viaducts and Stations	**diversity and patterns of commercial uses in the area: c** haracteristics of the uses, frequency of occurrence		
		location in the area: (station inner area, the arches, buffer areas) and spatial typologies introduced within pattern of commerce (entrance, enclosed spaces, monitored, free access spaces)		
	Urban - Context research on the urban conditions	**Spatial characteristics in the area:** during daily operations, such as new space configurations, pathways to access the stations, destruction of the block structure, fragmentation of urban areas		
		The physical space of the area: morphological development and the main characteristics as passages, buffer areas created with the viaduct and arches, station and station square		
The Routes of urban Dwellers	**Questionnaires**	**Uses in the area by urban dwellers**		
		Patterns of microcirculation: accounting on specific social-spatial patterns in the given space		
The Perception of urban Dwellers	**Qualitative interviews**	**Research on space identification patterns:** daily life, personal relation, identification through specific space patterns as viaduct façade/ station architecture		
		Research on specific days/ times: to reveal patterns of uses and of perceptions		
Space of varying urban Interest	**Qualitative interviews**	**Actors:** development characteristics/participation opportunities		
URBAN QUALITY / SWOT-Analyses	**Evaluation**	Strengths		
		Weaknesses		
		Opportunities		
		Threats		

Table 3-2 Table showing the analytic framework for the research on the specif area and its social spatial qualities

3.5 Limitations of the research

The field research for this study was conducted during the final stages of completion and the subsequent opening of the new *Berliner Hauptbahnhof*, Berlin's new central

station. Therefore, it is important to note that the ongoing process and the novelty of the project have influenced the topics related in the newspaper findings.

While historical sources provide diverse views of the functional and technical realm of the Stadtbahn project, accounts for the social impacts during the physical installation of the train system and the subsequent dereliction and destruction of inner-city were scarce. Attempts to evaluate these impacts were made by studying both documentation of the expropriation of city dwellers in the affected urban spaces and an exhibition catalogue published by an entity called the *S-Bahn Museum* in 1984 called *Stadtbahn, ein Viadukt mitten durch Berlin: Baugeschichte von 1875 bis heute* (Stadtbahn, a Viaduct through the Center of Berlin: building development from 1875 to present). The catalogue reveals the aspects of expropriations and the role the viaduct played. During the time of city's division, literature related to the Stadtbahn project was scarce, and documents about the viaduct were fragmented and difficult to reassemble.

Conducting field research in dense and highly frequented space means that although many people are around, they are not always willing to answer long interviews. Therefore, quick, targeted questions were asked to collect the qualitative data for the research project. This was a critical step for the in-depth research, but the results obtained remain fragmented. The same phenomenon affected the counting methods. Therefore, with the help of students, new interviews with visual aids were developed to account for the perception of the space by the people using it. The questionnaire was also meant to capture the opinion of passers-by with little time to spare, using a counting method to distinguish between people with shopping bags and people with suitcases, as consumers or travellers. In terms of the analysis of space, the data interpretations and generalizations of the research do not seek to reveal generalized patterns. Instead, they are considered to be supportive and to act as effective tools for understanding the relationship between urban dwellers and the transportation space.

Furthermore there is an awareness of the symbolic dimension in the intense post-modern architecture debate that has also affected the normative planning theories of Berlin, such as *Planwerk Innenstadt* see Chapters 2.1.3 / 4.3.1 (Rossi, Krier 1987). In addition, the symbolic dimension of infrastructure enables an understanding of the process of appropriation (Vesely 2004). However, this dimension has remained in the theoretical discourse, with the empirical research focused only on urban dwellers' perceptions. This is due to the main research goal of understanding specific forms of transportation space development through appropriation patterns from an operative

level as well as through planning strategies and urban dwellers' practices towards 'urbanizing' the infrastructure.

In order to understand the nature of the *Stadtbahn's* emerging railway space today, the research focus was set on transportation development, urban context and commercial dynamics. To establish if urban transportation space exists as social-spatial transportation-commercial configuration — in which the transportation development is not only related to transportation supply but also strongly linked to urban and commercial activities—the research focus was embedded in an interdisciplinary research frame. Empirically tested data related to commercial dynamics and supportive economic models was derived from a workshop addressing the economic impacts of inter-city connectivity on land price value in economic simulations of the *Stadtbahn* space (Ahlfeldt, Wendland 2009). Therefore, commercial data remains supplementary and supported by secondary literature.

4 THE DEVELOPMENT OF THE STADTBAHN AS TRANSPORTATION SPACE IN BERLIN

This chapter will discuss the development of the *Stadtbahn* transportation space in Berlin in order to understand the project's nature and dynamics. Negotiation and decision-making processes will be studied, as well as the planning concepts for the *Stadtbahn* space and associated commercial dynamics. The research focus is on the analysis of the viaduct's development pattern and contrasted with the station and station square development as nodes. In order to understand the specific role of the viaduct in the transportation area, the *Stadtbahn* space is understood in this work as a social-spatial. It illustrates social life through its structures and processes and fulfils more than its transportation function. The developments in the daily running of the trains, the activities in the viaduct, station and station square brought about particular spatial typologies connected to a functional and commercial organization of the urban space. Therefore, the aim is to chart the changes to the *Stadtbahn* network in a comprehensive compendium. The three relevant eras of *Stadtbahn* development as stated in Chapter 3 of this work will be examined in Chapters 4.1 – 4.3 as follows:

- The first two sections of this chapter (4.1 – 4.2) provide the historical background for the following section (4.3) and the related empirical thesis work in sections 4.3.2 - 4.3.3
- Each section (4.1 – 4.3) reflects firstly on the planning concepts (transportation, urban and associated commercial dynamics) related to the *Stadtbahn*. Secondly, the emerging urban transportation space will be revised by examining its conflicts, decision-making procedures and the emerging patterns of transportation performance, urban context and commercial activities. Thirdly, each section concludes with a discussion on the main findings of the transportation network and characteristics of the specific rail-elements such as the viaduct line with the arches and the nodes (station and square) for the development of the transportation space.
- The Synthesis (4.4) reflects on the viaduct specific development pattern and its particular conditions in the *Stadtbahn* transportation space.

4.1 Growing with the train: From Orth's original project plan to the implementation process of the Stadtbahn in Berlin in 1873 – 1910

Fifty years before the onset of the trend to nationalize the railway systems throughout Europe and at the zenith of Berlin's first major city modernization effort, the *Stadtbahn*, as a national public suburban transportation system, was officially inaugurated on May 15th, 1882. A decade of construction and problem-ridden modifications followed before the system was finally up and running through Berlin's inner-city. The main issues that resulted in significant project delays were caused by the construction of the *Stadtbahn*: Firstly, problems were encountered in acquiring the necessary building land and Berlin's sandy ground was responsible for construction difficulties. The poor soil quality combined with the characteristically high ground-water table meant a regular structure of massive arches was needed (Bock, Dittfurth, Hilbers 1984, in Arbeitsgruppe Berliner S-Bahn 1984:95). Secondly, due to negotiations on the purchase of private inner-city land, many changes were made to the Stadtbahn's route. Until 1871 rising land prices in the city had led to privately funded intercity railway reaching the peripheries of Berlin, but not penetrating the inner-city. An array of rail services built from 1840 – 1850 ended in head stations just outside Berlin's metropolitan area with arrivals from different German cities: *Stettiner Bahnhof* (station) for trains coming from *Stettin* (1841), *Frankfurter Bahnhof* for arrivals from *Frankfurt* (1842), *Hamburger Bahnhof* for *Hamburg* (1846), and so on. As early as 1851, plans were discussed to connect these isolated end-stations with a perimeter line. An efficient connection was implemented through the *Ringbahn* around Berlin, constructed between 1871 and 1877. Due to its location at the city's periphery the *Ringbahn* lacked a connection to the inner-city area and could not address the presumed suburban transportation demand for Berlin as an industrial city (Schaginger 1984, in Arbeitsgruppe Berliner S-Bahn 1984:28). The *Stadtbahn* was expected to meet this challenge, functioning as a suburban transportation system. It was to be built on expensive urban land close to the central urban areas already developed as Berlin's main commercial districts.

4.1.1 The planning concepts for the Stadtbahn space

4.1.1.1. Orth's original transportation planning concept

In 1871, the architect August Orth[43] sought to create an additional rail-based passenger service to complement the existing services of international and national goods transportation around Berlin (*Ringbahn*). Two series of editorial manuscripts by Orth in 1871 and 1873 describe the railway network project, the *Berliner Centralbahn* as one for suburban use with a clear metropolitan transportation bias.

For people not for goods

> *„Umfassende Beobachtungen der Verkehrsverhältnisse der in Berlin einmündenden Bahnen, das Studium der Stadtbahnen in London und New York und anderen Erhebungen führten zu der Überzeugung, dass die Berliner Stadtbahn vor allem dem Personenverkehr zu dienen haben, und deshalb sämtliche vier Gleise vorwiegend diesem Zweck nutzbar zu machen sein."(Orth 1871:45)* [44]
>
> *("Extensive traffic observations of the railways leading into Berlin, the study of the metropolitan railways in London and New York and other agglomerations result in the conviction that the Stadtbahn in Berlin has to primarily serve passenger traffic. Therefore, all four tracks are to predominantly serve this purpose. ")*

---

[43] In 1871 and 1873, Orth, wrote two memoranda for the Stadtbahn project. He represents one of the fathers of the Stadtbahn in Berlin. As an architect and urbanist Orth was attracted for over 3 decades by the development of railway systems. His first professional experience was with the Railway in Elberfeld from early 1856 to January 1858. August Orth subsequently passed the master builder examination at the Berlin Building Academy (Berliner Bauakademie) in 1858. Further study trips followed in 1859/1860 to the south of France, Italy and Sicily. He stayed faithful to the railway sector with his short stay at the Bergisch-Märkischen Railway in 1861/1862 and at the Niederschlesisch-Märkischen Railway as director of the technical office in 1863. He subsequently became a freelance architect, sometimes associated with Edmund Knoblauch, the son of Eduard Knoblauch. As the in-house architect of the 'Railway King' Bethel Henry Strousberg he built his palace at Wilhelmstraße 70 (1867–68) and his country house - Castle Zbirow in Bohemia (1869 - 71) – as well as the cattle and slaughterhouse facilities at the Berlin cattle market (Berliner Viehmarktes) on Brunnenstraße and the Strousberg controlled cattle market limited partnership (Viehmarkt-Kommanditgesellschaft),(1868–74). From 1865 he concentrated on spatial acoustics and used the results in his church buildings. Orth gained popularity with his manuscript for the Centralbahn Project for Berlin, which had originally seemed illusory but was later successfully developed. In July 1877, five years after the construction of the Stadtbahn, August Orth was elected building advisor for Berlin, in 1893 he became senior building advisor (Geheimen Baurat) and finally became chief building advisor (Geheimen Oberbaurat) in 1896.

[44] Orth thought especially to focus on the London Catham & Dover Railway of 1860 with the first viaduct line crossing London in the central area of the city

The *Stadtbahn* plan was a brand new concept: to transport people rather than goods as a primary goal. The existent primary mode of transportation serviced only the movement of goods and military resources and dismissed the importance of public transportation for Berlin. In the European context, Berlin was late in becoming a capital city. Therefore, Orth conducted in-depth studies on mass transportation in established metropolises, like New York and London, and investigated its influence on city development (Orth 1871:5). In his opinion, a proper study based on Berlin's economic conditions, but from a new point of view was necessary. One main goal of passenger transportation for Berlin was to improve the accessibility of the main business network between Hamburg and Munich by extending it directly into Berlin's high-density areas and commercial nerve centers. This idea emerged due to significant industrial growth and increased employment opportunities in the inner-city area during the last thirty years of the 19th century. It was intended to improve the mobility of merchants and workers and to increase Berlin's connectivity to key business networks around Europe. To consolidate these interests, the concept of the *Stadtbahn* passenger service was to connect the main terminal stations of the *Stadtbahn Charlottenburg* and *Schlesicher Bahnhof*, to parts of the long-distance train network.

Against Centrality: Orth´s plan to join long- distance routes with suburban traffic

Orth's proposal did not conceive of the *Stadtbahn* converging in a Central Station. He stated:

> *"Eine Central-Bahn ist gewissermassen eine grosse Central-Station mit zahlreichen Stellen, den Verkehr aufzunehmen, so dass nirgends eine Überlastung der Strasse eintritt, welche bei einer einzigen Central Station notwendigerweise erfolgen würde. (Orth 1871:5) […] So dass die Bahn nicht nur all seine Verbindung der in Berlin mündenden Bahnen untereinander und mit dem Mittelpunkt der Stadt erzielt, sondern auch als ein bequemes Verkehrsmittel zwischen den einzelnen Stadtteilen.(Orth 1871:5)*
>
> *("As such, a central railway line is merely one big central station with numerous points of access, so that no one point of congestion arises as it would in the case of a single central station ")*

What Orth tried to accomplish in his project was to avoid the concentration of passengers in a single central station. His idea was to develop a diametrical central station, a station outline without the functional junction in one specific point or node. His aim was to build an extended structure, with access points at 1 km intervals, traversing the center of Berlin. The proposal was to join the circle and peripheral lines through the center of the city with a North-South and an East-West axis. During the implementation

period, first- and second-class trains shuttled every 20 minutes across the urban area from *Charlottenburg* Station to *Schlesischer Bahnhof*. On an hourly basis, two of these trains continued their journey on the tracks of the *Ringbahn* (the circular route accessing the periphery of Berlin). Significantly, without causing an interruption of urban traffic transportation, long-distance train services gained limited access to the *Stadtbahn* railways, stopping only at specific stations. This meant that trains arriving from the West traversed Berlin's urban area and stopped at *Schlesischer Bahnhof*. Likewise, trains arriving from the East stopped at the corresponding west end station, *Charlottenburg*. What sounds like a technical manual for the train system in these descriptions was, in practice, an attempt to merge different traffic hierarchies onto a single train system, incorporating both suburban and long-distance networks within Berlin. Orth had learned from the New York and Paris central stations that centrality would mean a congestion of passengers at one point. In other words, Orth and the planners of the *Stadtbahn* at the national level expected a high number of passengers to use the suburban train to move through Berlin in order to reach its periphery.

The project proposal for the *Stadtbahn* - first published in 1871 - was regarded as unachievable in planning circles and among scholars. The public saw it as a speculative move (Külz 1984, in: Arbeitsgruppe Berliner S-Bahn 1984: 62). This scepticism can be understood if we keep in mind that when Orth published his manuscript, Berlin was far from being a metropolis and was surrounded by smaller, independent cities such as *Charlottenburg*. Private railway systems were forecast to remain in the city's outskirts because of the high urban land prices, and finally railway systems were considered primarily as carriers of goods, while the transportation of people was of subordinate interest.

4.1.1.2. The urban concepts during the Stadtbahn´s implementation

In 1871, when the planning of the *Stadtbahn* began, Berlin was not a metropolis. With a mere 826,000 inhabitants and an urban area consisting just of the *Mitte* district (20 x 15 km), Berlin was only a sixth of the size of Paris at that time (Schaginger 1984, in Arbeitsgruppe Berliner S-Bahn 1984:27) Statistisches Amt der Stadt Berlin 1970:45). *Charlottenburg, Cölln* and *Köpenick*, today integrated into Berlin, were independent towns. However, 1871 was also the year of the founding of the German Empire with Berlin as its Capital, the first significant declaration of the prevalence of Prussian political power. The will of the Prussian government was to modernize the city to convert it into a center of political, economic and industrial power. After 1871, the urban

agglomerations of Paris and London doubled, but Berlin tripled. By the turn of the century and the beginning of industrialization, Berlin had risen from a former residential and trade city with only a textile industry to an industrial city boasting two million inhabitants.

The main lever of this rapid industrial development was the mechanical industry, constantly extending its sales market to the railways. This new industrial development presented a basis for Germany to compete with countries like France and the United States for world leadership in the key sectors of technology, product processing, communications and the automotive industry. Berlin grew to become one of the predominant industrial metropolises in Europe, accompanied by the increasing political significance of the German Reich. However, the effectiveness of the authoritarian state in the advancement of industry, technology and transportation systems had no counterpart in housing planning and consumer goods policy. The industrialization of Berlin and the increase in inhabitants resulted in housing shortages and substandard housing conditions. One direct consequence of this rapid growth was the increase in speculative enterprises. Ultimately, the housing emergency along with its often-associated exorbitant rent and land speculation forced the inhabitants to move to Berlin's outskirts.

Another consecquence was that both building codes and the city re-organization plan, the 1862 *Hobrecht Plan* called for the development of long roads and *Mietskasernen* (large tenement buildings) to house the poorer population. These tenements consisted of a building that fronted the street and several parallel buildings and side wings to the rear, arranged around courtyards (Hegemann 1988:208). The plan also foresaw also the intensification of dense residential areas surrounding the core-city area with mixed-use development. The new street-grid based planning development—the Berliner block—clearly divided private space from private areas. Large boulevards were dedicated to commercial use was and organized it in radial or in circle circuits around the core-city area. The social-spatial organization of the city in 1870 shows that while the wealthy moved to western and southern areas, the poor, predominantly working masses remained for the most part in the North and the East of the city.

4.1.1.3. Commercial dynamics related to the Stadtbahn project: From private to public service

The Prussian State declared the Berlin railway system to be of highest priority, and it was nationalized due to the conviction that the trains could support the city's important

economic development, while simultaneously playing a primary military role.[45] During the planning of the *Stadtbahn*, the project changed hands from private investment (for goods transportation) to government-led public ownership. The *Stadtbahn* was to become one of the first systems[46] of a new managerial culture, developed and built as a single public transportation project under governmental guidance. The direct result of political power in the area of public administration and the development of urban infrastructure projects was the construction of several infrastructure projects within the city. Inner-city drainage systems were built in 1867; a horse-drawn omnibus system was implemented in 1868 (a decade later developed into horse-drawn railways); the paving of streets and general development of street cleaning in 1870; the first ring roads North and South in 1877; early market halls in 1880; and the steady development of street-lighting along with advancements in electricity and gas provisions in 1880. The latter of these innovations created the basis for the electric tramways and later the development of the ring railway system—the *Ringbahn*—in 1877 and the *Stadtbahn* in 1882 (Knödler-Bunte 1984, in: Arbeitsgruppe Berliner S-Bahn 1984:10). The *Königliche Preussische Eisenbahn Verwaltung* or *KPEV* (King's Prussian Railway Administration), and its suborganizations, *Stadt*, *Ring* und *Vorortbahnen*[47], a company founded with the specific purpose of representing the managing force of Berlin's suburban railways, took control.

It was only in 1920, with the creation of the *Deutsche Reichsbahn Gesellschaft*, that a general process of nationalized administration would expand across the German State. In comparison, France and England's transportation networks were not nationalized until 1930, in the midst of economic crisis—a stark contrast to times of growth and expansion during the period when the *Stadtbahn* project was nationalized. The early nationalization of the rail service was crucial for the further development of the *Stadtbahn*. Only public investment would be able to promote the new role public transportation should play—a role that private investors did not yet consider

[45] This interest in the military use of the Stadtbahn is further analyzed, as underlined project motivation.

[46] Berlin had already experienced several years ago a train system by public investor ship. The periphery ring road System Ringbahn built in 1870 was the first public developed line in Berlin.

[47] Brandes (1984) in: Arbeitsgruppe Berliner S-Bahn (1984), p.58; When the privat Stadteisenbahngesellschaft, city train association dissolved it was foreseeable that the 48 Million Reichsmark construction cost would not be enough and that the profit expected of the private sponsorship not in the amount as expected. The association resigned and the KPEV overtook the project.

profitable.[48] At this point, private owners had the intentions merely to run the transport of goods and to provide international train services. In 1876, the previously founded private sponsorship of the city train association (*Stadteisenbahngesellschaft*) became public.

The underlying project motivation: the military use of the Stadtbahn project.

> *"Mit der Stadtbahn werden zwei Absichten verfolgt: […]Es ist überdeutlich und symptomatisch für die preußische Militärmonarchie: würde die Regierung durch die Gleisanlagen im Falle einer Truppenmobilisierung nicht volle sechs Stunden einsparen, könnten die guten Berliner noch so manches Jahrzehnt auf ihre Stadtbahn warten. Wegen ihrer schönen Augen haben sie sie jedenfalls nicht bekommen, um ihrer Bequemlichkeit frönen oder Droschkengeld zu sparen zu können ebenso wenig. Der Nutzen der Bürger kam – echt preußisch- erst an zweiter Stelle, Hauptsache war der militärische Vorteil." (Brandes 1984 in: Arbeitsgruppe Berliner S-Bahn 1984:51)*
>
> *("With the Stadtbahn two intentions are pursued:[…] It is quite clear and symptomatic for the Prussian military monarchy: had the government not saved a full six hours with the railway tracks in cases of troop mobilization, the good citizens of Berlin would have waited still some decades for their Stadtbahn. Even their beautiful eyes could not have enticed, nor could a need for comfort or to save their droshky money have brought such a service about. Use by the citizens was—in typical Prussian fashion—secondary to military priorities.)*

The primary interests of military use as the likely driving force of the project are mentioned in many review sources, such as Brandes (1984), and more recently, in Boberg, Fichter, Gillen (1984) and Knödler-Bunte (1984). The importance of military strategy for the Prussian State is widely recognized, which then also provides an explanation for why it assumed authority on the *Stadtbahn* project. The argumentation for the military use of the *Stadtbahn* is reinforced by the fact that the *Ringbahn* project had already been influenced mainly by the needs of the Prussian military. The *Ringbahn* was built parallel to military planning, during the advance of the Franco-Prussian War: Its southern half ran through a still sparsely settled area at that time. The primary motivation was to access and connect the military fields at *Tempelhofer Feld* (later *Tempelhof Airport*). In addition, a favourable connection to cadet schools along with the innovation of horse-drawn railways encouraged the establishment of new settlement areas. In government circles, the *Stadtbahn* represented a „*Befriedigung des dringendsten militärischen Bedürfnisses*" (Satisfaction of the most urgent military need) (Brandes 1997, in Stratenschulte 1997:49). This suggests that the initial project plan was motivated, at least in part, by the fear and prevention of a military attack.

[48] Ibid

During the mobilization of the army in the autumn of 1858, the inadequate transportation infrastructure clearly led to the poor deployment of troops and following groups to the battlefield. In addition the line routing and rerouting through the northern part of the city underlined the military purpose of the *Stadtbahn*. In the implementation period, this district represented one of the city's military strongholds, featuring many military fields and cadet stations or army barracks. The *Stadtbahn*'s close proximity to the harbour area, *Borsighafen*, in the *Lehrter* station area also provided infrastructure for the effective deployment of troops, by accelerated mobility through Berlin's waterways.

Strengthening Berlin's central business district with the Stadtbahn lines

Besides the military influenced urban economic concept of the Stadtbahn, the planned line routing foresaw the connection of several of Berlin's business district's significant locations at Potsdamer Platz and Leipziger Strasse. With the planned connectivity, the financial district could be strengthened and the amount of employees and workers increased. At this time this business district was geographically seen as a central point in the urban development of Berlin, characterized by dense urban structures. At the time of Stadtbahn's planning, the Berlin's urban space featured a so-called mono-centric urban economy representing a central urban core with concentrated economic activities in the business district, surrounded by residential areas (Hegemann 1988:86). The Hobrecht Plan, already active since 1862, facilitated the development of both dense residential and mixed-use developments around the business district. The financial district grew along the representative boulevards in particular. The Stadtbahn's line-routing concept planned a quick connection to this economically important zone, with stations from the surrounding areas as well as from more distant zones of urban territory.

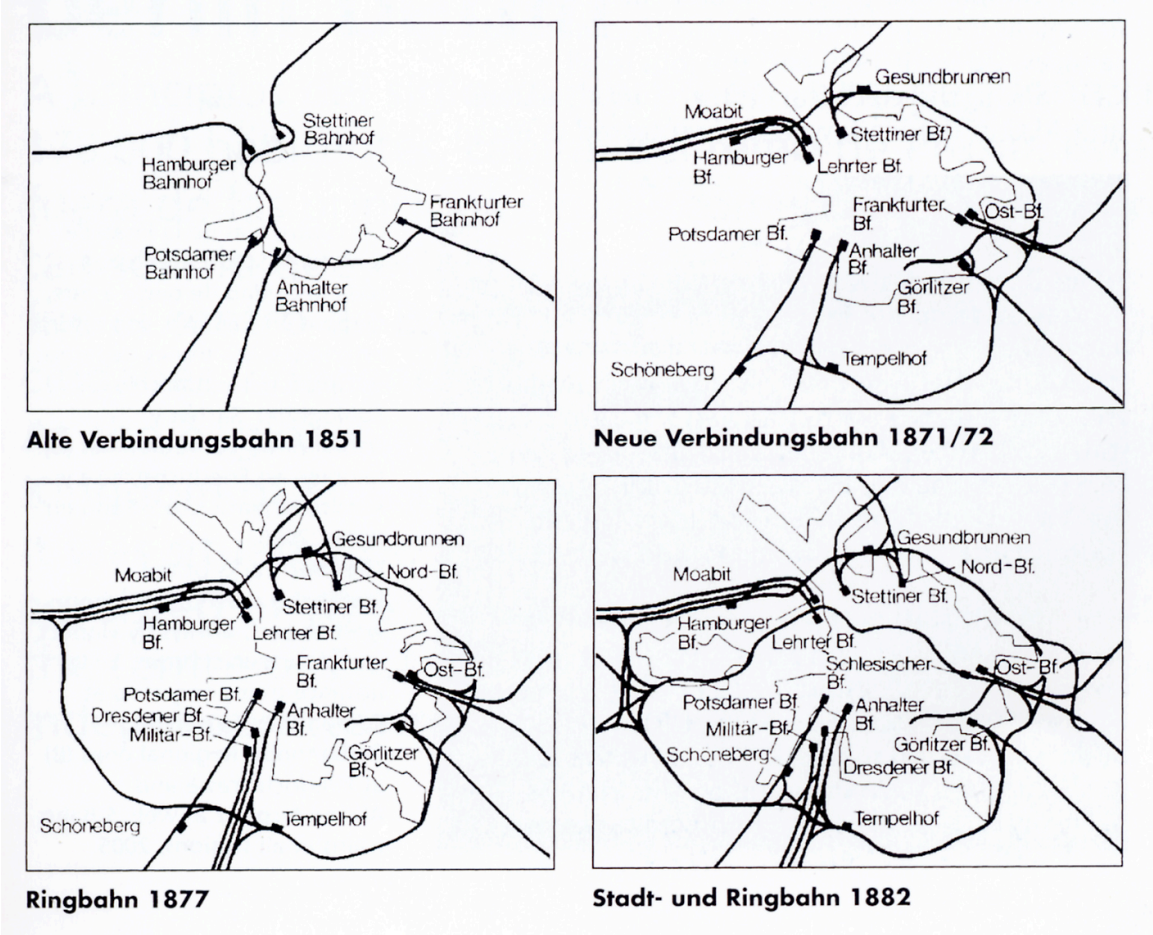


Figure 4-1 The railway development before the *Stadtbahn* was built in 1882 (Source: Klünner 1985).

Single head stations were connected by the *Ringbahn* from 1871 to 1877, which became an orbital peripheral network for Berlin. The *Stadtbahn*—the cross-city connection—joins the *Ringbahn*, the city periphery and head stations with the inner–city space of Berlin.

Figure 4-2 Kings Trench: The government-owned land for the *Stadtbahn* (Source: Schmidt, Eilhardt 1984).

The King's Trench was a remainder of an old fortification, which had been begun in the 18th century. In the 1880s the area was declared useless.

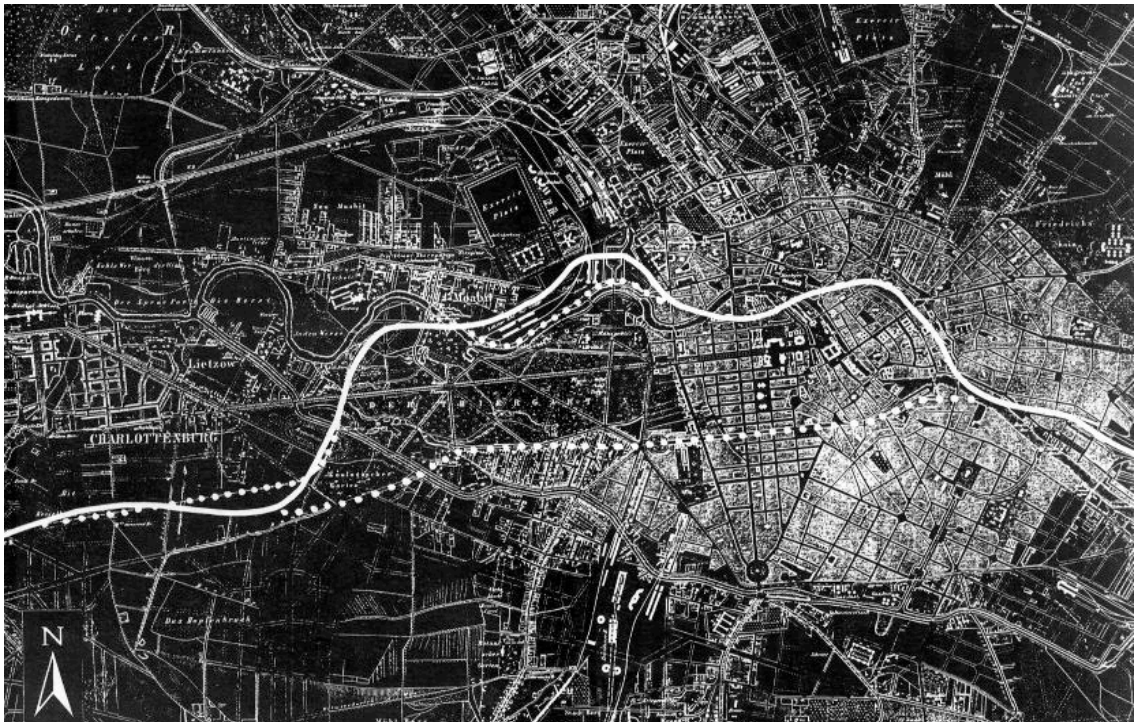


Figure 4-3 The *Stadtbahn's* line route changes of the *Stadtbahn (*Source: Dittfurth (Edit.) 1993).

The first proposal for the line route (dotted line on the map) was planned to directly cross the main inner-city districts in Berlin. The route was planned close to the most important commercial and business areas of Berlin (*Potsdamer Platz, Leipziger Str.*). Because the first route was not possible due to the expensive land prices, it moved north, crossing industrial zones closed to the *Lehrter* Station and *Tiergarten.* The three main changes to the former planned route affected 50% of the final project (68.128.699 *Reichsmark*). Its changes testify the negotiation process between different stakeholders. Its final route (the white line) is the physical results of this process.

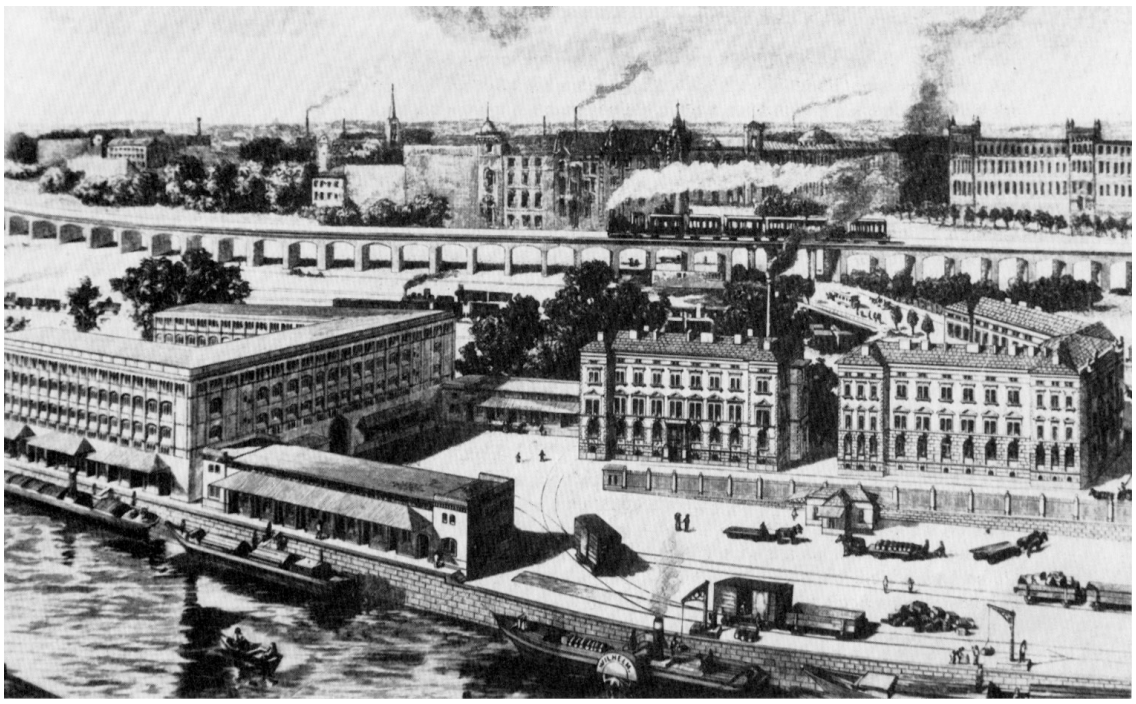


Figure 4-4 Illustration of the *Stadtbahn* design set in the existing landscape one decade before its construction (Source: Klünner 1985).

The painting shows the new industrial settlements along the river Spree. In the background of the painting, the city kept a "healthy" distance to the train and its rhythmic viaduct construction. It was an important point to connect industrial areas as well as business districts with workers and employees.

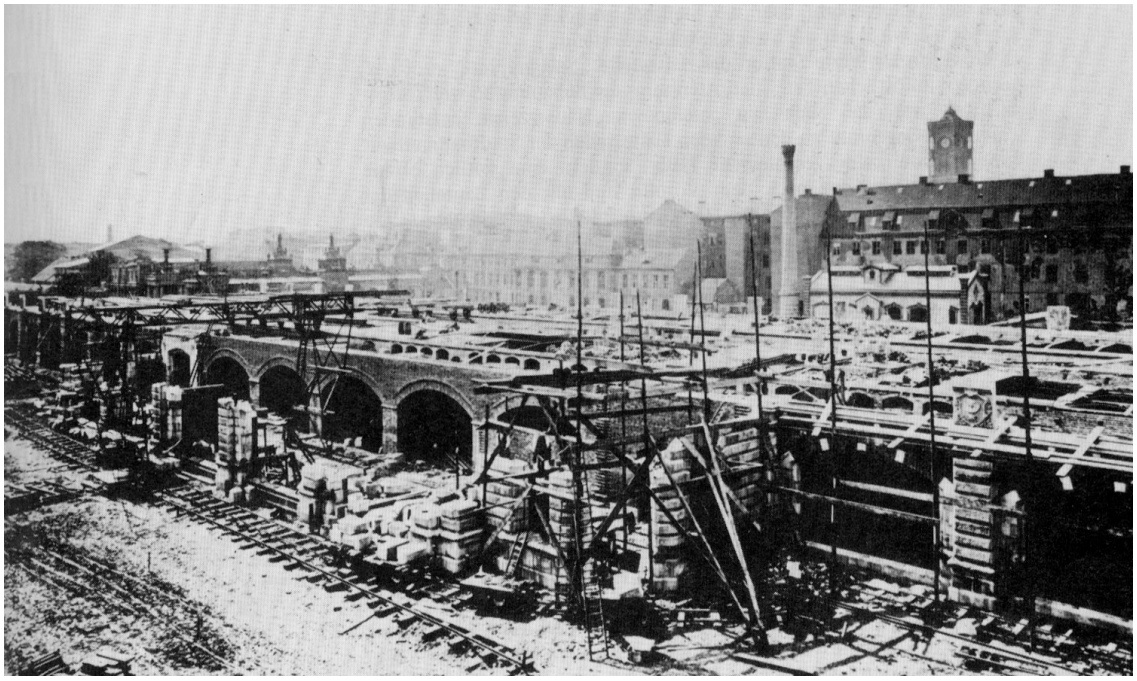


Figure 4-5 The 'real-life´ context of implementation in the inner-area of Berlin (Source: Schachinger 1984).

The *Stadtbahn* and its construction in the inner-city space of Berlin, in the *Mitte* district. The development of the viaduct was more than rhythmic contacts with Berlin's ground. Its intervention was massive. Its physicality changed the urban configuration of the area and provided new patterns of space development.

Figure 4-6 The development of the *Stadtbahn* railway line over the King's Trench "Bau der Stadtbahn in Berlin, Am Zwirngraben (Source: Schaginger 1984)

Figure 4-7 The development of the *Stadtbahn* railway line in the neighboring city of Charlottenburg (Source: Gottwaldt, Handke 1998).

The Savignyplatz, built in 1896, was the last station to open with service to Charlottenburg

4.1.2 The emerging urban transportation space: The implementation

4.1.2.1. Complex dialogs of varying urban interests: the *Stadtbahn's* line route changes

As expressed in the hypothesis and as shown in this section, the implementation of transportation concepts does not only bring significant changes to the urban land, but the transportation concept itself also suffers changes through implementation in the 'real circumstances' of the urban context. Therefore, this section investigates the process of railway routing—its characteristics and instruments as well as main difficulties, negotiations, decision-making processes and project development. Closely examining these changes reveals a complex dialog about the development of urban land for the train system between the public contractor, the Prussian government (for the growing role of Berlin in the transportation network through Europe), directly involved stakeholders and city dwellers. The accompanied transportation, economic and social-spatial dynamics significantly changed the inherent structure of the urban space as well as the transportation plan.

The reviewed sources provide limited information on the physical intervention of the *Stadtbahn* on the inner-city space of Berlin. Even sources recounting the problem-

ridden routing course of the project through Berlin provide little description of the demolition of existing buildings during the process. Pictures of the initial construction period ostensibly feature the *Stadtbahn*'s successful use as a new mobilization medium for Berlin, rather than focusing on the process of appropriation of construction land. For a closer look at the destruction process, sources were rfound that revealed the monetary appropriations of construction land and the process of expropriation (Berliner S-Bahn Musseum 1998:120). Further research based on the information obtained was complemented by cartographic studies of the areas affected by the *Stadtbahn's* route through Berlin.

At the time of the *Satdtbahn*'s implementation, the city of Berlin was comprised of two historical parts: the old medieval central district, *Mitte*, surrounded by the medieval wall, and the surrounding area that developed out of the representative baroque city extension, *Dorotheenstadt* and *Friedrichstadt*. A third city area encompassed the outskirts: the *Spandauer Vorstadt* to the North, the kings' outer city in the Northeast *Stralauer Vorstadt* and to the South the *Köpenicker Vorstadt*. The neighboring city of *Charlottenburg* was less connected to Berlin.

The successive processes of land appropriations, expropriation and the construction of the Stadtbahn

> *„Sieht man von einer erhöhten Stelle, dem Kreuzberg oder dem Rathausthurm, auf Berlin herab, so kann man sich des Eindrucks nicht erwehren, dass die Physiognomie von Berlin sich verändert hat. Welch' charakteristisches Städtebild zeigte das mittelalterliche, von Mauern umschlossene Berlin, wie geschlossen war noch das Bild des ummauerten Berlins gegen das der jüngsten Jahre - eines nach allen Seiten uferlos fluthenden Häusermeeres. Jetzt schon nimmt die neu emporgewachsene Stadtbahn die Rolle ein, die bei anderen Städten der Fluss spielt - eine Rolle, die unsere Spree bescheiden verschmähte oder die ihr missgünstig versagt geblieben ist." (National-Zeitung 7.2.1882, in: Urban Halle, Arbeitsgruppe Berliner S-Bahn 1984, 54)*
>
> *("If you look down on Berlin from a high place, such as the Kreuzberg hill or the tower on the city hall, you can't avoid the impression that Berlin's physiognomy has changed. What a characteristic townscape the medieval walled city of Berlin had, how complete the picture of the walled city of Berlin was in contrast to the city of recent years – a sea of houses, flooding outwards in every direction. Already the newly sprouted Stadtbahn is taking on the role played by the river in other cities – a role that our Spree modestly disdains or has begrudgingly failed to fulfill.")*

The purchase of construction land was a difficult and costly process and resulted in line route changes and project delays. The construction period started in the fall of 1875. It was a successive process of acquiring grounds upon which to build and then constructing the actual railway line. Therefore, the line was built on separate and

independent construction sites, determined by the success of land appropriation. Early plans to provide a connection for rail lines to the inner-city space from end stations *Charlottenburg* and *Schlesicher Bahnhof* through the urban core via *Potsdamer Platz* and *Leipziger Stasse* had to be abandoned due to problems encountered purchasing building land. Official accounts in the *Queens Chronicle* of the Ministry of Public Works in 1896 report that the three main changes to the route finally brought about a 20% extension of the line compared to its original design and increased the budget by 50% (estimated at 68.128.699 *Reich Marks*) due to the complex process of purchasing land (Kgl. Preuß. Minister der öffentlichen Arbeiten, in: Berlin und seine Eisenbahnen 1982:96). This meant, firstly, that during the *Stadtbahn* implementation from 1875 – 1882, the real estate market and urban land purchasing became highly speculative (Hoffmann-Axthelm 1984, in: Arbeitsgruppe Berliner S-Bahn 1984:19). This was fostered by the *Steinschen Reform* of 1850 and specifically by the so-called 'separation', allowing Berlin's private real estate sector to emerge from the previous medieval bondage system. The state, thereafter, functioned merely as an usher of actual developments, while the development projects themselves were put in the hands of speculators during a spontaneous period of growth. Town planning, therefore, became a problem of finance. National planning measures required the use of privately owned areas of land to build roads or squares and had to pay compensation to the owners. A problem of numbers then arose: more property owners means more parties at the negotiating table, making the realization of the *Stadtbahn* inherently more difficult (Hoffmann-Axthelm 1984, in: Arbeitsgruppe Berliner S-Bahn 1984:21). The idea that the Stadtbahn implementation could simply be realized through (forced) purchase was out of date. The complex property purchasing conditions needed to be addressed. Facing this situation, the criteria formulated by the state railway developers were as follows: Firstly, adapt wherever possible to the existent property borders and respect the particular shapes of the sites and the urban grid. The still-private railway companies worked accordingly, their strategy being to get as close to the town center as possible without becoming involved in the complex urban land purchase situation. Secondly, the opportunity to reach the inner-city areas was provided when the government assumed management of the project in 1876 and the possibility arose to build the *Stadtbahn* over government owned land (Schachinger 1984, in: Arbeitsgruppe Berliner S-Bahn 1984:29).

Therefore, the first *Stadtbahn* line was constructed in dense areas of the city over the King's Trench. This government owned land was available because it no longer fulfilled a function. This route represented the part of the line between *Börse* Station, *Monbijou*

Park and the Eastern part of *Friedrichstrasse* Station, connecting the main areas in the Eastern part of Berlin. However, this resolved only one specific part of the line routing issue. The intention to provide a suburban transportation system meant procuring swathes of construction land. This was hampered by the proliferation of privately owned real estate in the targeted areas. Another method for obtaining construction sites was employed—the lengthy and bureaucratic purchase of single properties. In1876, 51 building properties were bought for the construction of the *Stadtbahn*. The national planning company, as shown in the business report of 1876 (Schachinger 1984, in: Arbeitsgruppe Berliner S-Bahn 1984:30), was aware of several risks relating to the value of the properties if the *Stadtbahn* was not built, if concessions were lost to build the railway facility or if certain deadlines were not adhered to.

The purchase list of buildings shows that the first area of regular appropriation was around *Friedrichstrasse* Station, in the immediate vicinity of the King's Trench. (*Am Zwirngraben* 1, 2; *Friedrichstrasse* 142, 141; *Georgenstrasse* 7, 16, 17; *Neue Friedrichstrasse* 21, 21b, 22, 23).[49] However, these acquisitions were not sufficient, and the inner part of the line construction was finally resolved several years later. In some cases, only parts of the properties were needed for the *Stadtbahn* construction, but the real-estate creditors often did not want to sell. With regard to general inner-city housing conditions, oftentimes properties represented the living and working places of dwellers, a pre-industrial spatial dynamic connecting living and working spaces. One can presume that many building owners used the ground floor and yard spaces of their building for trade or cottage industries. The dwellings upstairs were rented if not used for the owner's extended family. The rent was also extended to the rear buildings, usually for housing poorer working classes, if not additionally used for the given trade (personal rooms, stockrooms or stables) (Schachinger 1984, in: Arbeitsgruppe Berliner S-Bahn 1984:34). Since the economic existence of the owners was in many cases secured by their properties, they tried to obtain as high a sales price as possible or steadfastly resisted selling altogether. Occasionally, some exchanged properties affected by the construction of the *Stadtbahn* for others in close proximity. In this context, the viaduct arches would come to play a special role as spaces for interchange (Schachinger 1984, in: Arbeitsgruppe Berliner S-Bahn 1984:34).

[49] See for detailed outline the Berliner Block Typologie in: Borgelt (1988)

Another way to purchase construction land was through expropriation. This process was also lengthy and bureaucratic. After each expropriation process, an price estimation procedure would follow, which was requested by the head of the respective police department. In estimating the price of the property, its location played an important role along with any preservation regulations regarding the building. This process emerged in the area of intended construction near the neighboring city of *Charlottenburg*, a somewhat less developed city than Berlin at the time. The social background of the people affected by expropriations is not well documented. In most cases, only the surname is registered. With the expropriation of 33 inner-city properties, crofters were the primary group affected in *Charlottenburg*, in addition to traders and gardeners. This area represented the western part of the line construction. It was built after the first train line section—the King's Trench—was installed and before further development in the centre of Berlin. At that point, the line was comprised mainly of two erected sections.

The middle section seemed to be the most complex and the process of aligning the line through the dense urban field between *Friedrichstrasse* and *Musseumsinsel* was difficult (Schachinger 1984, in: Arbeitsgruppe Berliner S-Bahn 1984:34). The process specifically required the negotiation of agreements between the conflicting wishes and requirements of different stakeholders, of private and public interests. Not until the spring of 1879, four years after the first construction, was a decision made that the *Stadtbahn* should cross the urban field along the path of *Friedrichstrasse*, passing *Musseumsinsel* and then moving northward, through poorer areas, industrial zones and military facilities around the *Lehrter* Station, crossing the main dense housing areas of Berlin tangentially. Even if the project did not directly cross the inner-city area, its link to the northwest part of the city also caused the destruction of existing built-up areas of Berlin at several points (around the northern part of *Friedrichstrasse* Station, *Lerther* Station and *Tiergarten*). From here, the line followed a path through *Tiergarten*, the King's hunting grounds, to the existing line section ending in *Charlottenburg*. On its opening day in 1882, the entire *Stadtbahn* line boasted a total of 12145 km of rail, 1823 km of iron bridges, 1683 km of earth embankments and 7964 km built between nine stations and over 757 viaduct arches (Schchinger 1984, in: Arbeitsgruppe Berliner S-Bahn 1984:36).

4.1.2.2. The Stadtbahn development

The change to the line route caused by the implementation problems meant that the new, transportation did not connect inner-city areas of Berlin as originally planned. The *Stadtbahn* system, as can be seen in Orth's manuscript, was initially designed to be a system for both suburban and long-distance train traffic, accomplished by connecting the urban space with long-distance services. The national and further trans-national network would be linked in the western and eastern parts of the city by the stations built for international rail service.

Alexanderplatz and Friedrichstrasse become Stations for regional and national traffic as changed planned network outline

Only three months after the inauguration of the *Stadtbahn*, additional long-distance traffic services on the *Stadtbahn* system were opened. The system had been planned with four railway tracks, incorporating the demand for suburban and long-distance 8long-distance train service was established. By 1877, within the *Stadtbahn´*s first decade of existence, services for both suburban and long-distance commutes had increased. The *Stadtbahn*'s end stations were connected to other train networks, with trains from Hamburg running through *Charlottenburg*. By the end of 1889, this line extended the suburban transportation line in the west beyond *Charlottenburg* and through *Spandau*, a new suburb of Berlin. It continued in the east to *Köpenick*, *Friedrichshagen* and *Erkner*. In 1891, the Potsdam train appeared, offering a fast connection to the last monarchical center of Berlin, *Sanssouci* Palace, built in the neighboring city of Potsdam. Besides the increased connectivity to the *Stadtbahn*'s end stations, two intermediate stops were upgraded and took over services for international and urban traffic. These were *Alexanderplatz* and *Friedrichstrasse*.

Urban Development with the network structure of the Stadtbahn

Transit traffic on the *Stadtbahn* grew, and its popularity as a method of urban transportation increased in line with Berlin's population boom. In 1882, there were 20-minute intervals between trains during the day, while in 1894 the intervals were reduced to 5 minutes. By 1900, intervals had been cut to 2.5 minutes with 700 journeys completed per day (Külz 1984, in: Arbeitsgruppe Berliner S-Bahn 1984:65).

However, the unveiling of the rail network also promoted a new development, represented by the expansion and migration of industry along the valley of the River

Spree. In 1885, a station at *Warschauer Strasse* was built between *Schlesische Strasse* and the *Ringbahn*. Its function was to connect the industrial area to the train circuit and to relieve the congestion of *Schlesischer Bahnhof* caused by its original connection to the *Ringbahn*. The direct linkage to the peripheral *Ringbahn* supported a migration of industry to the outskirts of the city in the west and northeast, such as with Siemens in *Charlottenburg* and AEG in the northern quarter of Wedding. Following the development of the project's end station *Charlottenburg*, inhabitant and building activities in areas adjacent to the station increased. For this so-called 'new west end' (*neu Westend*), growing around the stations of *Charlottenburg* and *Zoologischer Garten*, the *Stadtbahn* offered better connectivity with the city of Berlin. The main result of this connection was that the important neighboring city of *Charlottenburg* eventually merged with Berlin in an intensive commercial and cultural exchange. Within a decade, they appeared as an agglomeration, integrated for the first time as one city. In return, this development forced a reciprocal development of the *Stadtbahn*. In 1884, the station *Zoologischer Garten* in *Charlottenburg* was expanded with an additional inter-city rail platform. New stations in the area between *Charlottenburg* and Berlin appeared as a consequence of the now agglomerated urban space: In 1896 a new station, *Tiergarten*, opened between *Zoologischer Garten* in *Charlottenburg* and *Bellevue* in the older periphery of Berlin. The building of this station stood in close correlation with visitor demand for access to the inner-city park (*Tiergarten*) as well as that of students and professors to access the *Technische Hochschule Charlottenburg* (today Technical University Berlin), in 1880. The last station to open with service to *Charlottenburg*, as already mentioned, was *Savignyplatz*, in 1896. The *Stadtbahn* also contributed to the increase in activities throughout the outskirts. A second wave of wealthy inhabitants abandoned the city in response to the development of industrial zones in the inner-city areas. The first outskirts following this trend were planned to offer reliable and rapid connectivity with the railway system, resulting in the extension of line routes. From the west end station *Charlottenburg*, the system extended outward to offer direct access to the wealthy outskirts of *Zehlendorf* and *Wannsee*. Subsequently, *Zehlendorf* and *Wannsee* stations were constructed in 1891. In addition, for the recreational traffic to Berlin's outer forest, the station *Grunewald* was built in 1896 offering direct access to the *Stadtbahn*.

4.1.3 The production of urban space with the railway in the industrial Berlin, 1882-1910

This section elaborates on the changes in the urban fabric brought about by the *Stadtbahn* project during the industrial era of Berlin between 1882 and 1900. The transportation network did not reach the important areas in the inner-city of Berlin as originally planned, due to changed line routing and implementation problems. However, the *Stadtbahn* system represented both an intra- and interconnecting network. The national and further transnational network was linked in the western and eastern parts of the city with the stations built for international rail service. Besides the planned terminals the system was additionally supplemented with the redevelopment of *Alexanderplatz* and *Friedrichstrasse* stations, By the end of 1889, this line extended the suburban transportation line in the west beyond *Charlottenburg* and through *Spandau*, a new suburb of Berlin and neighboring cities as *Potsdam*.

The *Stadtbahn* with intra and inter linkage played an important role as a stimulant for the development of industrial Berlin (Boberg, Fichter, Gillen, 1984:114). Its relevance was both as a provider of rapid access to services for different urban activities, and as a developer, fulfilling the constant need to extend the railway system to achieve the new demands of the now extended city. This can be shown by the successive extensions of the *Stadtbahn* network. This can be shown by the successive extensions of the *Stadtbahn* network, the construction of new stations, particularly on the line between *Ostkreuz* and *Westkreuz* (the East and West crossings). These two stations provided entrance points to the peripheral rail network. *Stadtbahn* passenger services provided connections to inner-city areas, such as to workers' housing, and enabled highly qualified employees to travel between various industrial and commercial areas. During the lead up to the 1880s, these inner-city areas became more concentrated. However, the unveiling of the rail network also promoted a new development, represented by the expansion and migration of industry along the valley of the Spree River. The direct linkage to the peripheral *Ringbahn* supported a migration of industry to the outskirts of the city in the west and northeast, such as with Siemens in *Charlottenburg* and *AEG* in the northern quarter of Wedding. Following the development of the project's end station *Charlottenburg*, inhabitant and building activities in adjacent areas to the station increased. The main result of the connection was that the important neighboring city of *Charlottenburg* eventually merged with Berlin in an intensive commercial and cultural exchange. The *Stadtbahn* also contributed to the increase in activities throughout the outskirts and the new weekend activities of Berliners to the peripheral areas of the city as *Wannsee*.

In the context of project development, the discussion will focus on the results for the railway elements taking into account the changes in:

a. the character of the viaduct

b. contrasted in a broader sense to the development of the stations and the principles of the station square

4.1.3.1. The character of the *Stadtbahn´*s viaduct: Dialog with the adjacent area

> *"Für die Strecke durch schon bebauten Stadteile und den Tiergarten war eine gemauerte Viaduktstrecke gewählt worden, die außer der Möglichkeit einer ungehinderten Kommunikation auch den finanziellen Vorteil der Vermietbarkeit der dadurch entstandenen Räume hatte."*[50]
>
> *("For the railway course through the already dense city areas and the Tiergarten a brick viaduct was chosen, which offered the possibility of uninterrupted (traffic) communication and the financial advantage resulting from the available (viaduct) space.")*

The *Stadtbahn* would come to represent the latest viaduct system in Europe in regard to other viaduct systems built, earlier in London and Paris. Sources do not explicitly indicate the reasons why the *Stadtbahn* project was forced to discard the former iron construction proposal for the development of a massive brick viaduct building. Nonetheless, two reasons have been uncovered. Technical problems would have resulted from building iron framework constructions on Berlin's sandy underground and high ground water table (Bock, Dittfurth, Hilbers 1984, in Arbeitsgruppe Berliner S-Bahn 1984:95). The tunnel situation typical of London, Paris or Barcelona—the cutting of a path through the ground—was therefore not possible. However, the tunnel situation would have helped in the approach of the *Stadtbahn* as suburban transportation, avoiding interference with the general city traffic such as cars and buses.[51] The existing building conditions would also have presented significant implications for the development of an underground tunnel based system, considering the technical capabilities of the time, especially regarding the crossing of waterways and the removal of train smoke emissions, which would have significantly increased

---

[50] See: Die Berliner Stadt-Eisenbahn, in ZfBw 34 (1884), p.20

[51] Already Orth planed that joint points with other city traffic in surface network where to avoid, because of the interferences this has mattered.

construction costs. These difficulties could be overcome by a permeable structure of open viaduct spaces and additional bridges.

Thus, the decision to elevate the system was made. The elevation of the track lines was further defined by Prussian guidelines requiring a clearance of 14 feet (4.4m) (Schmidt, Eilhardt 1984: 88). A few sections of the supporting structure were constructed upon sandy embankments, while most of the line was developed with arched brick viaducts.

Secondly, the physical appearance of the viaduct also affected its development. Orth underlined the importance of developing a 'pleasantly-ordered' train space for the urban space in his influential manuscript. The viaduct with a '*wohlgeordnete Fassade*' (pleasantly-ordered) would provide an answer to these requirements (Orth 1871:34). The article that appeared in the Chronicle of Berlin and its Railways of 1896 further supports this hypothesis.[52] This document explains that the viaduct line was specifically proposed to cross the urban space. It was argued that the viaduct would improve the appearance of a strong and well-formed system.[53] In fact, the arches collectively represent the biggest built structure in Berlin to date. During project development, the viaduct was included as part of the station space, along with reception and distribution areas.

Additionally, the development of the viaduct met other requirements of daily city life. The development of the viaduct seemed to play a consolidating function amongst different stakeholders, as seen in the section on the implementation of the *Stadtbahn*, in particular, as a compensation for the expropriated traders as well as inhabitants of the building sites. In 1896, 105 of the 597 available viaduct arches were assigned to the group of expropriated property owners as compensation and to adjacent property owners.

The *Stadtbahn* was one of the first viaduct projects that 'refilled' completely the open spaces of the viaduct, creating useable rooms defined by urban facades (Boberg, Fichter, Gillen 1984:101). These facts show that with the opening of the *Stadtbahn* in 1882, the proposal for the viaduct's open spaces was already clear. The viaducts were

---

[52] See for detailed outline the Chronicle of Berlin and its railroads (1896) in: Arbeitsgruppe Berliner S-Bahn (1984), pp. 56-90

[53] Ibid

additionally intended to support urban traffic through their adaptation to the existing city grid by bridges spanning over streets. Nevertheless, the viaduct space was to be used as advantageously as possible for the stations, their maintenance and operation. Renting out the viaduct additionally defined the development of urban facades. Of the original 731 viaduct arches, 597 were available for rent. Their sequential numbering began at *Schlesischer Bahnhof* and ended at *Savignyplatz* immediately before *Bleibtreustrasse*.

The uses of the viaducts

Suburban stations and interconnecting stations provided different services. In the viaduct for urban traffic, they included ticket services, one or two waiting rooms for passengers, offices for railway employees and equipment storage. Services were housed in the viaduct spaces of major stations as points of interchange for national/international services, such as *Friedrichstrasse*. The viaducts also provided access to the stations and ticket services, waiting halls, storage rooms, offices for railways employees, mail services, police stations, laundry services and equipment storage. In addition, the renting of the viaduct spaces for additional uses was of significant relevance.

From 1882 to 1885, the amount of rented viaduct spaces increased from 58 to 127 arches and to 373 by 1895 (Boberg, Fichter, Gillen 1984:107). The array of viaduct uses usually emerged from the surrounding urban situation. This was especially true in terms of accessibility (as seen in *Dircksenstrasse*, *Georgenstrasse*, *Lüneburger Strasse*) from parallel roads along the metropolitan railway route, which facilitated the use of the arches. Around the stations, small shops and restaurants rented the arch spaces. Restaurants in the viaducts emerged from the original use as *Wartehalle* (waiting hall) (Boberg, Fichter, Gillen 1984:107). These offered specialized services to all customer groups, including waiting halls for males and females, different travelling classes and destinations. The waiting halls emerged in the viaduct in the stations and adjacent arches.

Savignyplatz area in Charlottenburg

The *Stadtbahn* arches on *Savignyplatz* opened in 1892, only five years after the opening of the railway service. However, they were initially rented with some hesitation. It was only after the *Savignyplatz* station entered operation in 1896 that the location

captured regular clientele, thus gaining more interest from potential renters. In the arches at *Savignyplatz* between *Grolmann* and *Uhlandstrasse* (*Charlottenburg* district), a shop was set up by *Tattersall des Westens*, a popular riding school, which remained there until the end of the Second World War. Also at this time, a market hall was created in the arches at *Savignyplatz* offering fish, vegetables and fruit. A greengrocer worked in the arches of *Knesebeckstrasse* until the early 1920s. From 1900, a number of garden and flower shops could be found in various arches. In 1905, the blacksmith *Wolter* inhabited the *Fassanenstrasse* arches, directly in front of *Savignyplatz*. In arches 590 and 591, *Arno Leuchten*, a light fixtures store, appeared in 1928 (Binger 1984, in: Die Berliner S-Bahn 1984:187). Particularly unusual and unique was a center for sculpture that installed several studios in the arches. Before World War I, there were up to five sculptors with their shops, and in 1898 there was a blacksmith and a cabbage plot. Around the turn of the century typical uses were small businesses such as hairdressers, laundries and shoe repair shops.

Rented viaduct space for the main market hall and wholesale in Berlin Mitte

> *„Die Markthalle lehnt sich an den Stadtbahnviaduct an der westlichen Einfahrt des Alexanderplatz-Bahnhofs, deren Bodenfläche die Halle ansetzt. Es folgt der erweiterte Viaduct der Stadtbahn, auf welchem die drei Gleise liegen, welche bestimmt sind, die Marktgüter bis an die Halle zu schaffen. Diese Gleise münden östlich mit einer Weiche in das Schienennetz der Stadtbahn.“*[54]
>
> *("The market hall abuts the Stadtbahn viaduct, near the western entrance to Alexanderplatz station, on whose floor the hall begins. It follows the extended Stadtbahn viaduct, on which three tracks are located, which serve the purpose of supplying the market hall. These tracks lead east and rejoin the Stadtbahn network")*

The rail viaducts and arches were of particular importance to the Berlin's supply chain. The most important institution in this area—the Central Market Hall—opened in May, 1886. With 11,000 square meters of floor space and a 20-meter high ceiling, it was 25% larger than the *Halles Centrales* in Paris and was directly connected to the *Stadtbahn*. Equipped to supply the main market hall at *Alexanderplatz* Station with fresh produce on a daily basis, the *Stadtbahn* line was additionally extended in 1886 with a direct connection to the market hall—a unique feature at this time. Goods were loaded / unloaded on an exclusive track between *Alexanderplatz* and *Börse*. Having its

[54] Newspaper, Illustrierte Zeitung, Leipzig-Berlin 29.5.1886 in: Boberg/Fichter/Gillen (1984), p.110

own rail connection was a unique feature of the market hall at this time. Since the upper floor of the market hall was level with the cargo tracks, it was possible to lift goods directly from the ground floor or basement of the market by means of hydraulic lifts. Deliveries to the market were made during the night in order not to disturb passenger traffic.

Bellevue in Berlin Mitte

The viaduct spaces also housed fresh fish markets, from which the goods were transported in special freight wagons. The western part of the viaduct line provided retail space for fishmongers and greengrocers in the arches around Bellevue station. Giant pools with artificial seawater were installed in the arches for lobsters. The oldest industrial tenant was the salt wholesaler Otto Baumeier, established in 1890 in the arches of the *Lüneburger Strasse* (*Tiergarten* district). Other shipping companies were located in the area, trading wholesale fish, meat and beer. The reason for this was its close proximity to *Lehrter* cargo station (in the 1880s *Güterbahnhof Spreeufer*). The tracks parallel to *Lüneburgerstrasse*, behind the *Stadtbahn* arches, were favourable for rapid cargo (Boberg, Fichter, Gillen 1984:109).

4.1.3.2. The contrast to the principle for the station and square: The 'Bahnhofsquartier'

On the day of its opening, the *Stadtbahn* line consisted of nine stations: *Schlesischer Bahnhof* (today *Ostkreuz*, eastern crossing), *Jannowitzbrücke, Alexanderplatz, Börse* (today *Hackescher Markt*), *Friedrichstrasse, Lehrter Bahnhof* (today *Hauptbahnhof*), *Bellevue*, *Zoologischer Garten* and *Charlottenburg*. There were two end stations (*Schlesischer Bahnhof* and *Charlottenburg*) and two intermediate stops (*Alexanderplatz* and *Friedrichstrasse*). All of the stations served to accommodate urban services as well as long-distance ones. During the first decade of installation, this picture would change in a multitude of ways. Usually a new station was built on the line in response to the new development that resulted from the functioning of the transportation system. The tendency of high-density commercial and social activities to cluster in the areas surrounding major European stations can also be observed at the major stations of the *Stadtbahn* network in Berlin.

A dynamic commercial zone connected to the station itself was located in the dense area around *Friedrichstrasse*, one of the *Stadtbahn*'s most important stations. *Friedrichstrasse* began to work as a catalyst for economic activities in the center of

Berlin, and thus, its surroundings soon flourished with the most reputed hotels and the finest commercial areas along the street *Friedrichstrasse*.[55] Not only were commercial activities concentrated here, but the most expensive residential real estate in Berlin too. With the mix of dense urban development and the railway network's connectivity potential, the demand for land increased, as did the land price and the attraction for commercial activities.[56] The advantages of privileged mobility, self-expression and their social implications turned this area into one of the most valued areas in the urban space in terms of urban and commercial activity (von Gerkan 1997:41).

[55] See Bodenschatz presentation at the Technical University of Berlin, Workshop, " Railways, Real Estate & The Re-making of Cities in the 21st Century" Railway station area redevelopment mega-projects in Europe & beyond, 16th& 17th October 2009

[56] See Ahlfeldt & Wendland (2009) study on urban economical impacts related to the Railway in Berlin. Ahlfeldt & Wendland show that over the period 1890-1936 land values significantly increased when the distance to the nearest rail station was reduced as the network became denser. They find that the value of land increased by up to 2.5% for a 100 m reduction in distance to a railway station. They also show that in the study period from 1890 - 1936 a marginal price effect of a 1 km reduction in distance to the city centre declined from 78% to 40%, while peripheral locations gained considerably in valuation relative to the urban dense area. No clear trend was found if the accessibility to the city centres

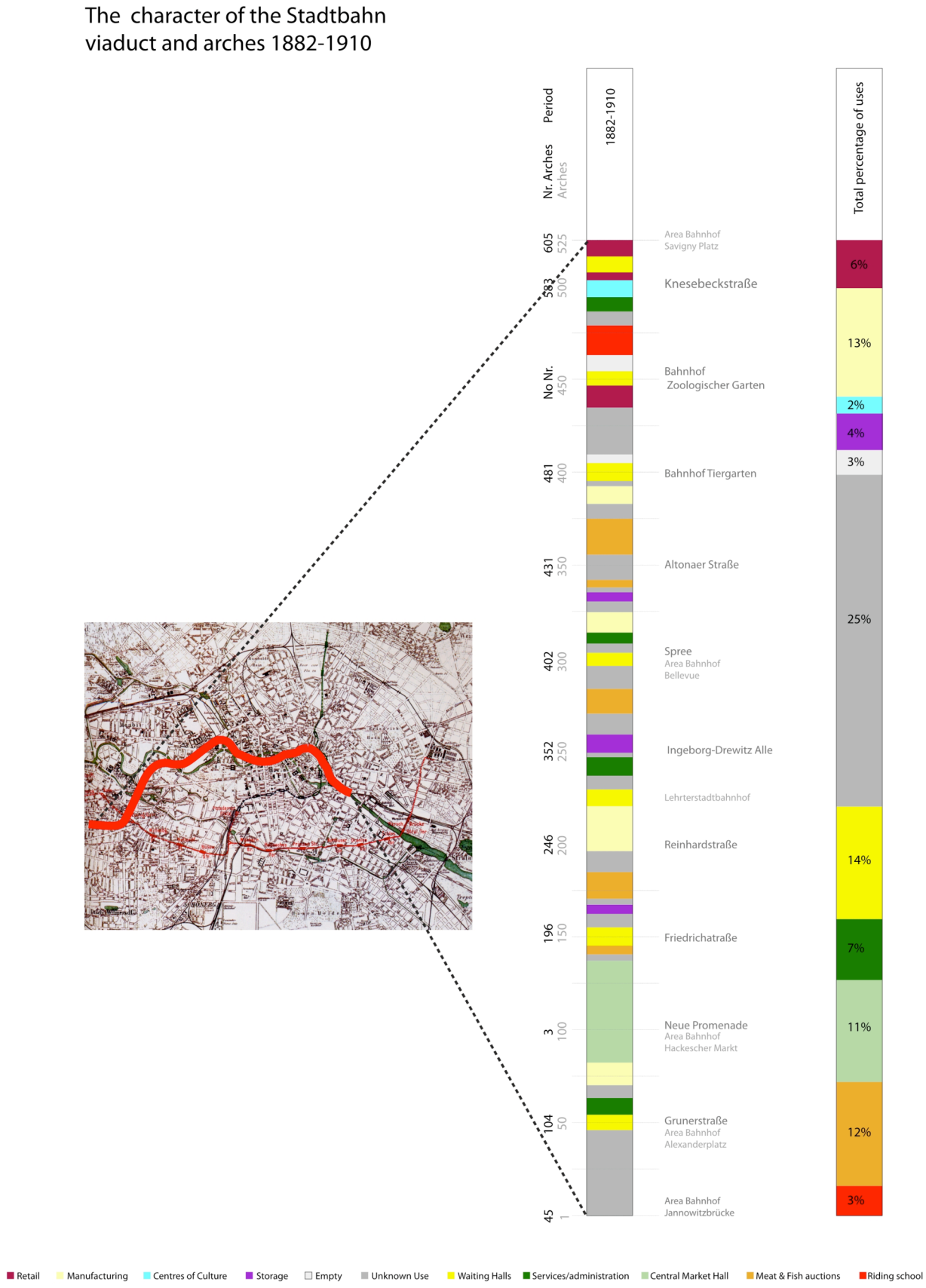
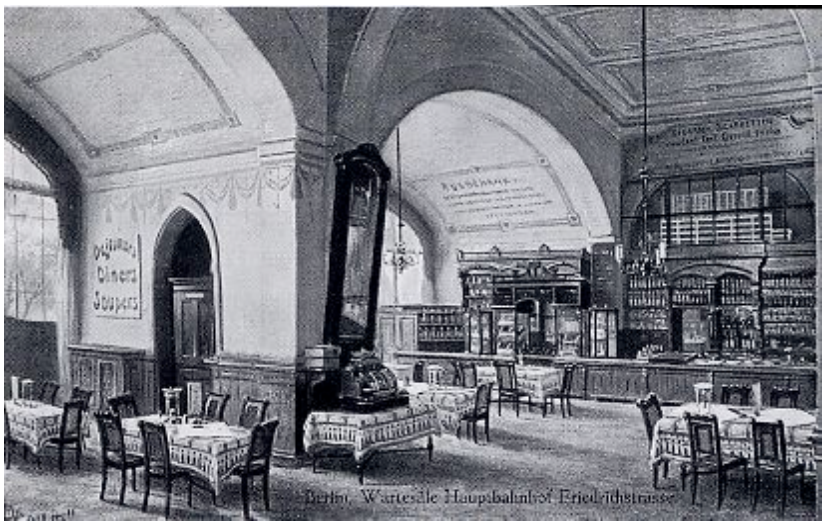


Figure 4-8 The production of urban space in Berlin *Stadtbahn* space between 1882 – 1910: The uses of the viaduct arches (drawing by the author).

Figure 4-9 Initial uses of the arches (Source: Gottwaldt / Handke 1998).

a) Restaurants derived from the idea of the waiting hall. The restaurant '*Zum Franciskaner*' at the *Friedrichstrasse* was on of the first restaurants in the arches.

b) The waiting hall for ladies at *Alexanderplatz*. The additional uses included from ticket sale, baggage storage, and postal service and waiting halls. These rooms were divided for different passenger classes. The design depended on the class of waiting passengers.



c) The viaduct space at *Friedrichstrasse*. This waiting hall was for the III and VI passenger classes. At the desk information about departing and arrivals could be obtained.

Figure 4-10 The *Stadtbahn* arches and the main market hall (Sources: Gottwaldt / Handke 1998).

The main market hall (built 05/1896) located in the viaduct arches to the west of *Alexanderplatz*: A view towards *Dirksenstrasse*. Seven viaduct arches were integrated in the project as trade halls. The use as the market hall was one of the first station independent uses of the viaduct arcs. The goods were delivered at night by train and arrived on their own track lines to the market hall to be stowed in subterranean stockrooms.

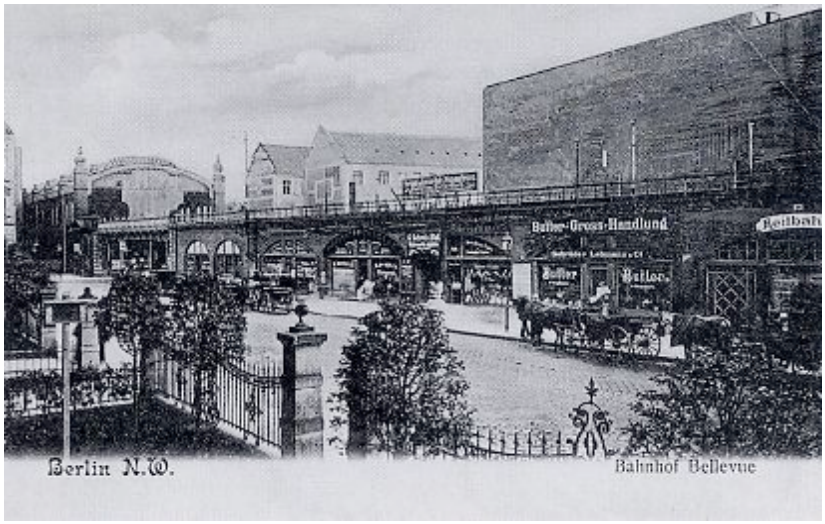


Figure 4-11 The arches in use at Bellevue station (Source: Gottwaldt / Handke 1998).

The station Bellevue was developed with additional trade units in the station area.

Figure 4-12 Arches in use at the *Dirksenstrasse* (Source: Boberg, Fichter, Gillen 1986).

The arches along *Dirksenstrasse* show additional uses to the market hall, such as small-scale manufacturing.

Figure 4-13 Arches for the trade of fish and soap in 1930 (Source: Boberg, Fichter, Gillen,1986).

a) Before 1900 Arch Nr. 408 in *Flensburger Straße* was already before 1900 the main branch of soap distributor *Losch Seifenladen*. The founder lived on the corner across the street.

b) Mr Wolter started his internship as locksmith in the arches close to Savignyplatz. Afterwards, he started his own buisness with his wife in arch Nr.137

c) Fish wholesale in 1930. The *Zentralmarkthalle* first covered the demand for fresh (living) fish was in big quantities, and thus transformed it into a popular meal. However, the fish wholesale did not take place in the big Market Hall, but had its sales location under the *Zentralmarkthalle*, in connected *Stadtbahn* arches in *Dircksenstraße* and in big trade lots in the nearby streets.

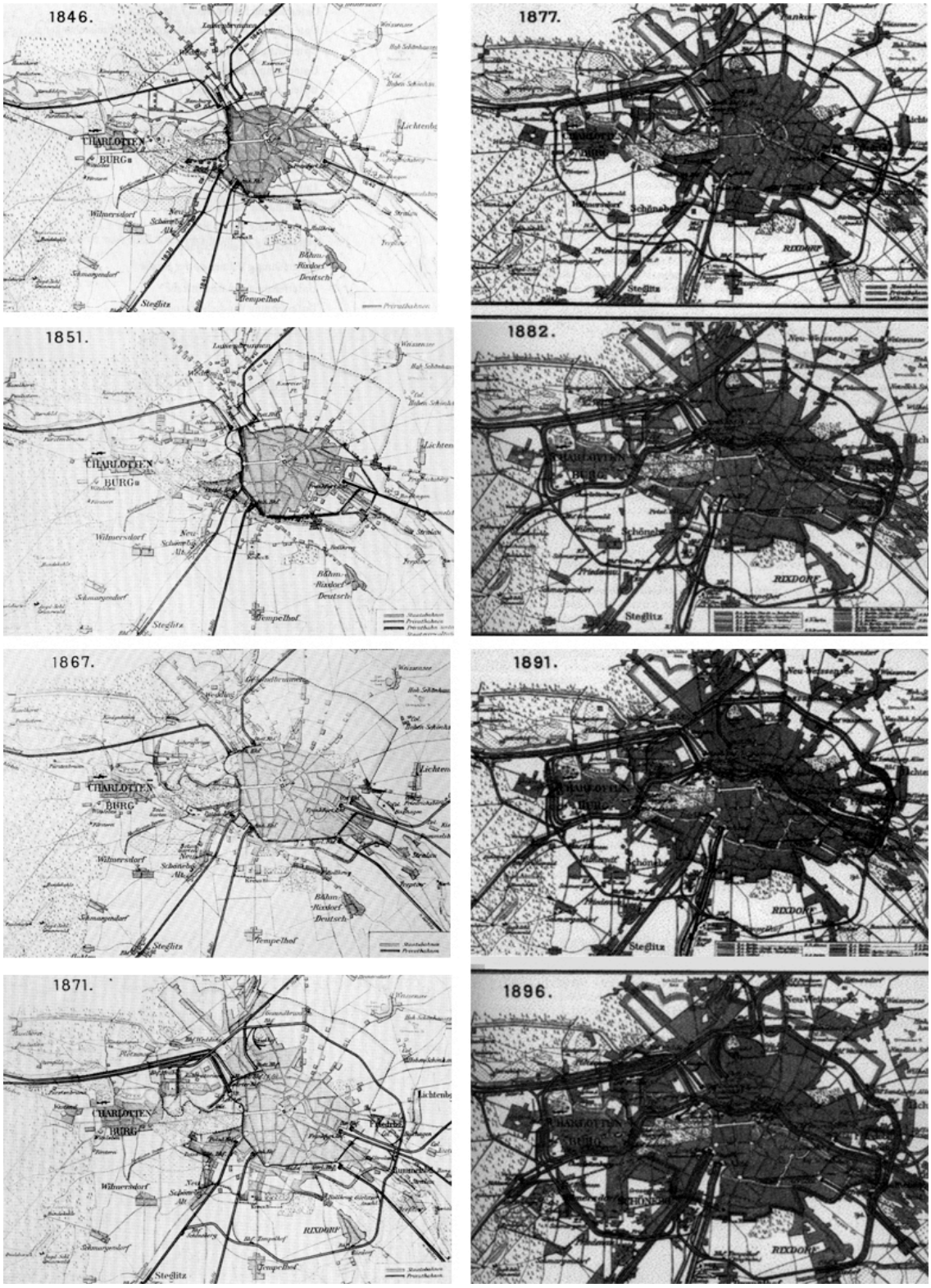


Figure 4-14 The urban land of Berlin and the railway network in 1846-1896. (Source: Schmidt,Eilhardt 1984).

The first plan to join the head stations in the periphery of the city had appeared as early as 1846. At the time the urban areas in Berlin still show the outline of the historical nucleus. The train systems retained a peripheral appearance over the next 20 years, while the development of the ring train defined the use of areas within the city. In its inner-area the urban territory increased to reach the ring structure, while its outskirts provided industrial zones in close proximity. With the implementation of the *Stadtbahn* the agglomeration of Berlin changed visibly. The cities of Berlin and *Charlottenburg* merged. The development of the inner-city becomes denser.

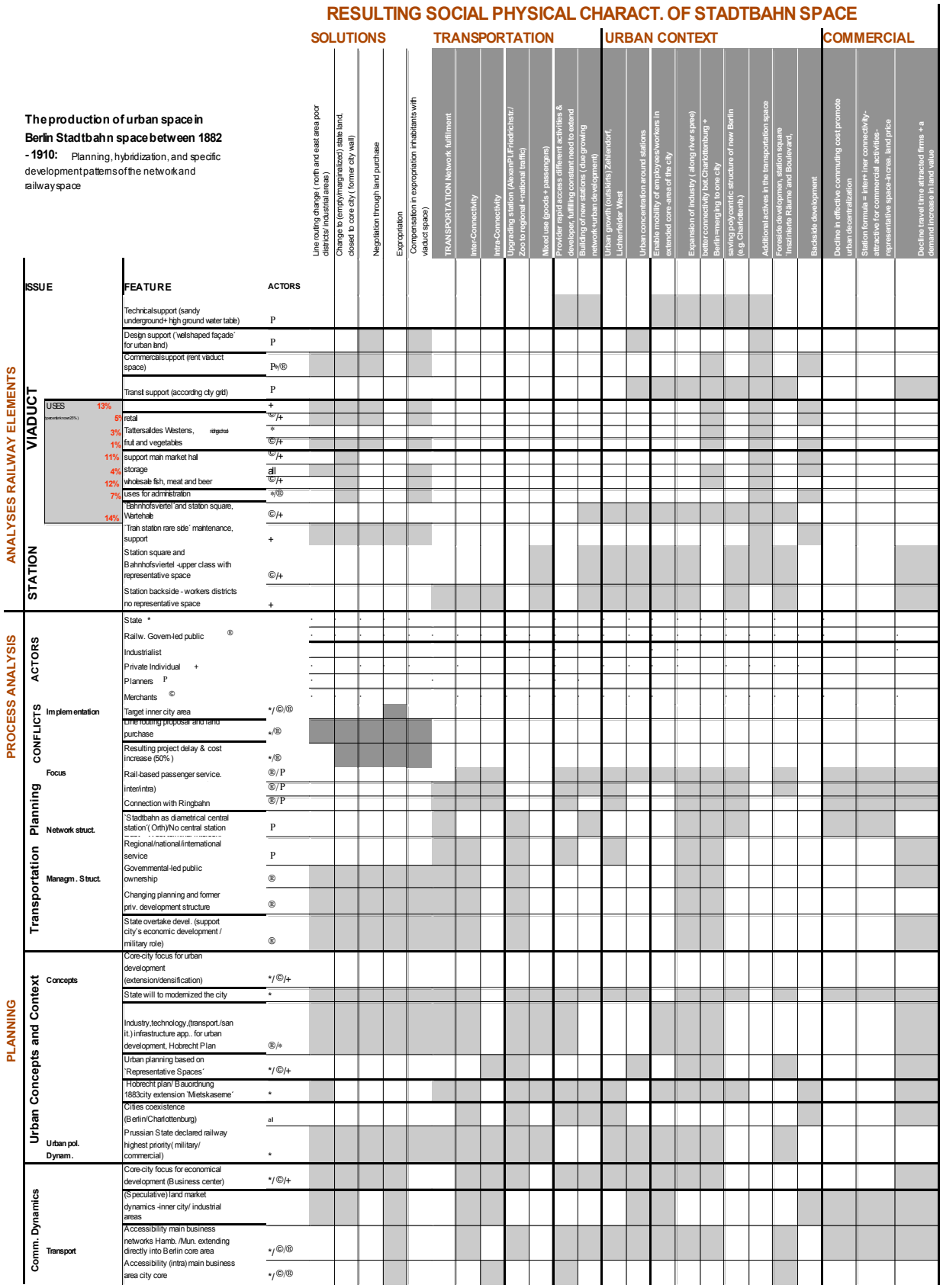


Table 4-1 The production of urban space in Berlin *Stadtbahn* space between 1882 and 1910: its planning, hybridization, specific development patterns of the transportation network, urban development related to the railway elements (viaduct and stations)

4.2 Forcing the division with the train: From the division of Berlin's transportation network to the boycott of the Stadtbahn in 1961 – 1985

Following the same outline as in point 4.1, this section is concerned with the *Stadtbahn* project development from 1961 to 1985.

After the division of Berlin's urban territory into East and West Berlin after 1945, the *Stadtbahn* began to function as two separate, independent entities, although they were based on the same pre-existing system. There are two explanations for this, one physical and one political, both in the context of growing tension between the Eastern and the Western worlds (von Lüpke 1983:30).

The physical division of Berlin, and in particular the way the city was divided from north to south, is reflected in the cut through the middle of the *Stadtbahn* viaduct system at *Friedrichstrasse* station. Along with Albert Speer's East-West Axis and the Spree River, this part of the train system represented one of the most important east–west connections for traffic of primary people but also goods. For Berlin-West in particular, the division meant a dislocation from the former historical center. This was where the *Stadtbahn* and the city had been developed, each based on an intimate dependence on the other (See for detailed outline to the development of the train and the city shaping each other 4.1.3).

Another element that illustrated the physical division was the East–West State border surrounding West Berlin. The border cut off network access to the city hinterland, so that the *Stadtbahn* could no longer offer its mixed system services of regional network interconnection.

The second reason for the development of two independently functioning *Statdbahn* systems was political. The control of *Stadtbahn* operations in both East and West Berlin was held by the GDR. Because of this paradoxical situation, the system was boycotted in West Berlin by both the government and the users. In 1984, the *BVG* (the West Berlin Transportation Company) took charge of the *S-Bahn*'s railway service in West Berlin. The system was slowly improved—after years of poor maintenance the structure needed to be renewed and significant damage had to be repaired.

4.2.1 The planning concepts for the Stadtbahn space

The transportation planning concept for the division of the Stadtbahn

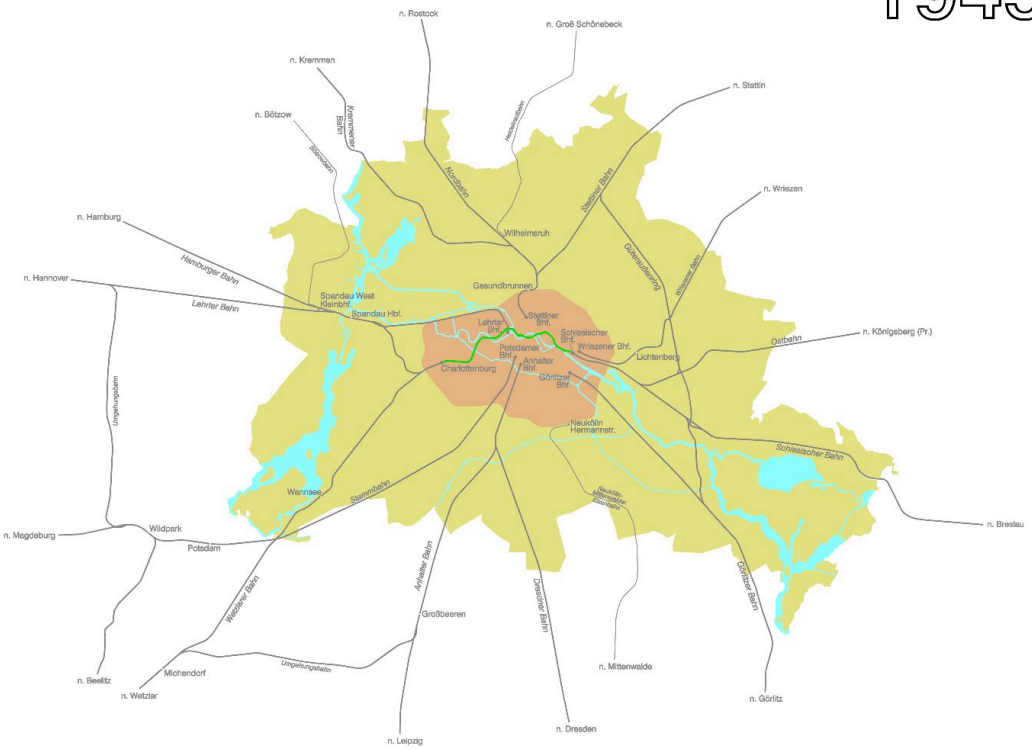
Shortly after the government of Berlin was divided into the Western Alliance (France, England and the United States) in the West and the Russian Government in the East, the *S-Bahn* system also began to see a division in its layout up to the early 1950s. The GDR's main aims were to disconnect the West from GDR territory, including the long-distance train service to West Berlin, and to avoid the routing of Eastern *Deutsche Reichsbahn* (DR) trains through Western territory, in an effort to cut of services to the West Berlin 'island' area. In order to achieve this, they planned a new ring rail structure around West Berlin, so that East Berlin would have its own independently functioning train network.

The following graphic shows the planned and completed division of the transportation network. Gradual changes continued to be made to the network structure. In 1950, plans were made to disconnect the outer periphery of Berlin at the border of Eastern and Western territory. This brought about a division of existing lines, which crossed West-Berlin and GDR territory. Stops along the border had to be built to provide two independent lines, one for the GDR traffic and the other for West-Berlin. Additionally new lines had to be built to serve the new suburbs that were developing on the periphery of East Berlin. In 1961, significant changes can be seen in the network such as the lines which are cut at the city limits and, particularly abruptly, at the Berlin Wall. New inner radial lines for urban traffic were designed to reach *Friedrichstrasse*, located in East Berlin. As outlined in the plan, the western lines remained connected through the *Stadtbahn* line to *Friedrichstrasse* too. Other transit stops between Berlin East and West were built separately to service the movement of passenger and goods.

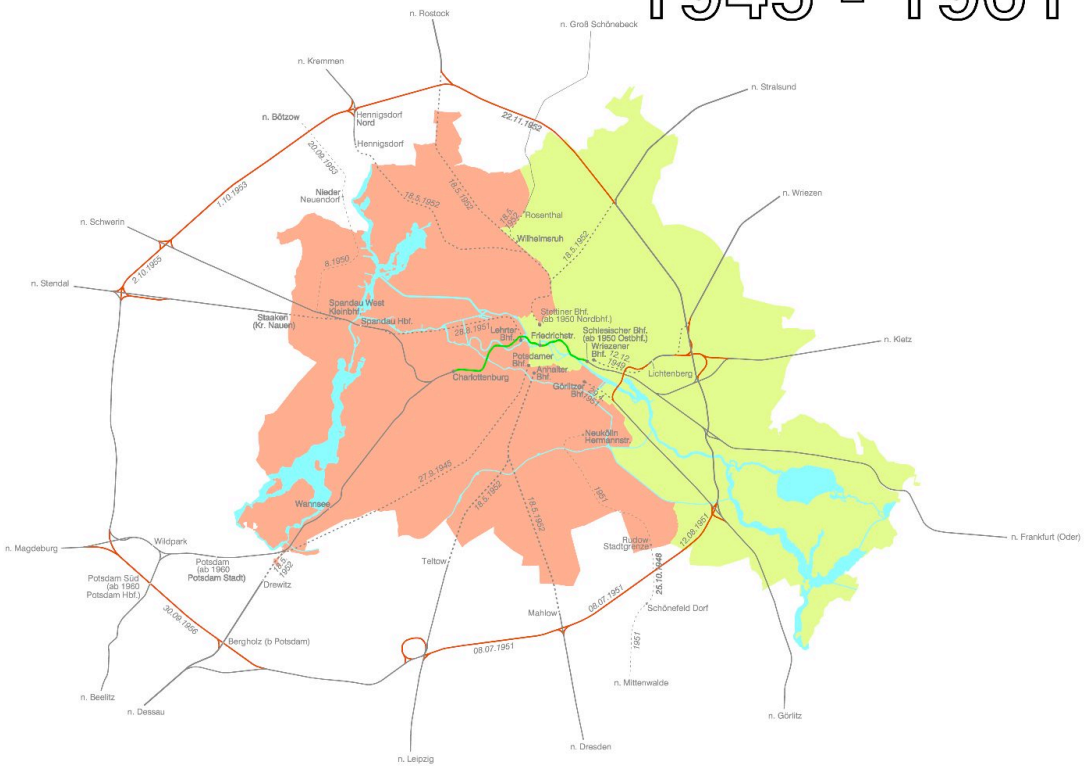
Figure 4-15 (following pages) The development of the *S-Bahn* network from 1945 to 1989 (Source: Cabrini, in: Alfaro, 2007).

All the new lines are marked in red with the completion date and show the role the *Stadtbahn* had: In 1945, the net structure still shows its historical radial structure. In 1950 the radial lines to West Berlin were disconnected at the border and connected to a new ring structure in GDR territory. The railway network after 1961: The outer line as well as the ring line was cut off at the city limits by the building of the Berlin Wall. The inner radial lines cross the border to reach the common connection point '*Friedrichstrasse´*, located in East Berlin without intermediate stops. Other transit stops between Berlin East and West were built separately in service for passenger and goods traffic.

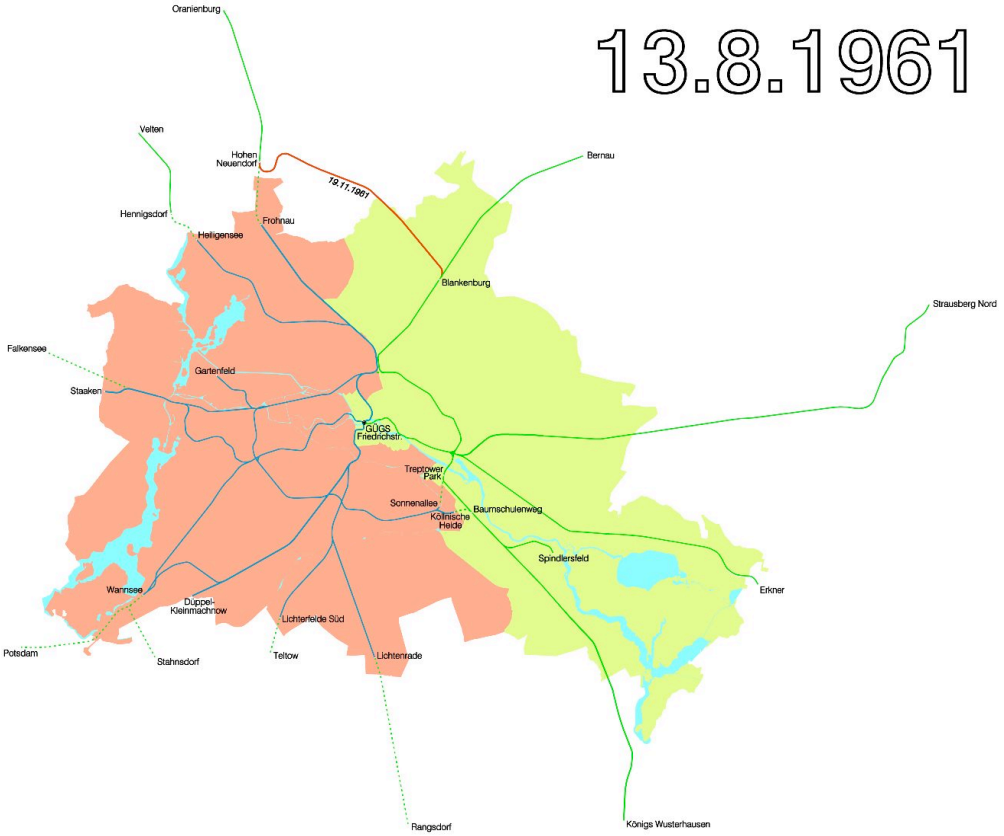
1945



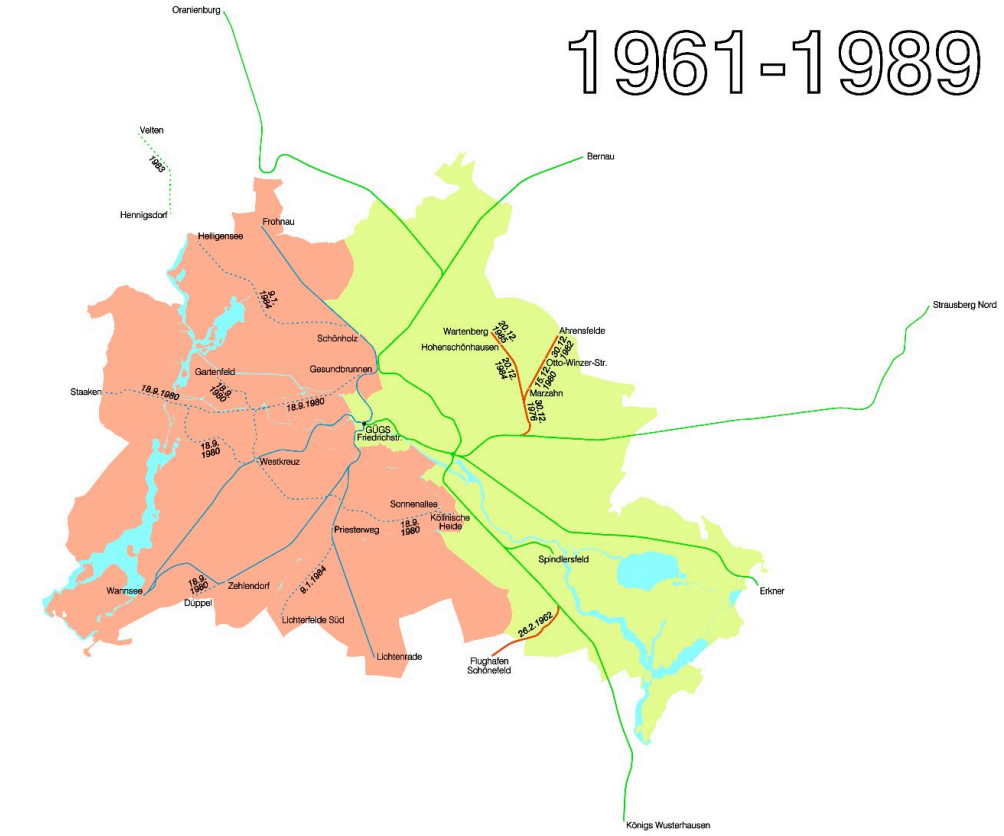
1945 - 1961



13.8.1961



1961-1989



4.2.1.1. The urban concepts in the divided city

Despite the physical and managerial division of the *Stadtbahn*, it continued to be considered relevant in both parts of the city. The competition '*Berlin Hauptstad"* Berlin Capital City) held in West Berlin in 1957, was to be the final attempt at a publicly-created master plan that included the urban territory of both East and West Berlin. In 1959, the competition '*Berlin Hauptstadt der DDR*' (Berlin Capital City of the GDR) conducted in East Berlin was a clear sign of a will towards independent decision-making. Both proposals provide an interesting account of the political circumstances at the time and their implications for the development of planning in Berlin during the division. The *Stadtbahn* was involved in both competitions, as it largely comprised the transportation area of the competition territory.[57]

The 1957 competition '*Berlin Hauptstad"* (Berlin Capital City) aimed to reconstruct Berlin as a whole, although it was spearheaded by the West Berlin administration. The area designated by the competition for development was almost entirely located in the central eastern part of Berlin – the historical district of the city.

The framework of the competition developed by academics and the municipality was based on the ideological construction of new typologies. A possible new beginning was to be achieved through concepts of radical modernization and urbanization and become a model for the country. The intention behind the competition was to provide a solid basis on which the notion of a capital city could be built. The new state had the opportunity to conceive its capital as the center of administration, culture and the economy. The idea of a 'capital' was a key element in the call for proposals and was pervasively presented:

> *"The concept of 'capital´ signifies action of politically creative determination and of shaping order. The complexion of the new capital will however not be that of nationalist governmental power. Rather, it will be dominated by the ideas of democracy and international collaboration on equal footing. Here, the aspirations of the individual must find expression as much as the order of the community."*[58]

The GDR government considered this competition a 'political provocation' mainly because the call had been launched by West Germany alone, and Berlin was

---

[57] see Competition outline Hauptstadt Berlin. Planungsgrundlagen für den städtebaulichen Ideenwettbewerb. Bundesminister für Wohnungsbau u. Senator für Bau- und Wohnungswesen (1957), pp. 56-80

[58] see Competition outline Hauptstadt Berlin. Planungsgrundlagen für den städtebaulichen Ideenwettbewerb. Bundesminister für Wohnungsbau u. Senator für Bau- und Wohnungswesen(1957), p.12

conceived in it as one city. Hence, the project remained unrealized, and only two years later, another competition was launched by the GDR with the equally provocative title 'Berlin, Capital of the GDR'.

The GDR project proposal area was roughly the same as that of the competition organized by West-Berlin just two years earlier. Additionally, *Stadtbahn* services incorporated into the guidelines of the competition were broadened with a new line between *Alexanderplatz* and *Schloßplatz*. The competition outlined the role of the *Stadtbahn*:

> *"The city railway line needs to be strengthened between Ostbahnhof, Jannowitzbrücke, Marx-Engels-Platz[59], Friedrichstrasse, Lehrter Bahnhof, and Bellevue. This will allow Jannowitzbrücke Station to create recreational space along the Spree and to create enough large steamer docks with restaurant facilities. On both sides of the overground Stadtbahn 30-40 m wide un-built strips are foreseen, the idea is that the railway is not driving through the "backyards" of the city, neither is it on designed architectural main axes."*[60]

In 1960, the first prize was given to architects Kaiser, Gericke and Swiss. In their proposal, the role of the *Stadtbahn* was even more ambitious. The train design area was proposed not only as the axis between *Alexanderplatz* and *Marx-Engels-Platz*, it was significantly enlarged to include today's *Hackescher Markt S-Bahn* station and even the *Nikolaiviertel*. In this planning context, the *Alexanderplatz* and *Hackescher Markt Stadtbahn* stations were considered new commercial centers, and the proposal envisioned the rebuilding of this area with office towers and a central building at the crossroads of the two axes: Today's *Unter den Linden* area from the north to the south and *Karl Marx Allee* from the east to the west. In 1967, during the early phases of construction, this proposal to develop the railway line with additional parallel streets and the development of the existing *Stadtbahn* stations *Alexanderplatz* and *Hackescher Markt* areas with new office buildings was abandoned. Because of economic shortcomings and technical difficulties, the planning proposal was replaced with projects in its intermediate surroundings, the development of the *Friedrichsforum* with the television tower and the *Palast der Republik* (Center for Cultural and Political Events). Several parts of this plan remained completely unrealized. Plans to give the station at *Hackescher Markt* a face lift with new office buildings and a new commercial

---

[59] N.B. Plaza at the Alexander Platz

[60] Bundesminister für Wohnungsbau und Senator für Bau- und Wohnungswesen (1957), p.90

center in its proximity were postponed, and the area remained untouched until the re-unification of Berlin.

4.2.1.2. Commercial and political boycott and the consecquences for the Stadtbahn

After the Second World War, the Soviet occupying forces controlled the *Deutsche Reichsbah.* Meanwhile, in the Western districts (later the Federal Republic of Germany) the allies founded the new German Federal Railways (DB), and the DR then became the state railway company for the newly founded GDR. It was because of Berlin's unique and complicated status without a clear formal political reference fully belonging to either Eastern or Western power, that the DR remained the official provider of the *S-Bahn* urban network and long-distance trains. After the German Democratic Republic erected a physical border dividing Berlin on August 13th 1961, the S-Bahn continued to be operated by the *Deutsche Reichsbahn* (DR) under the control of the GDR, which was strongly boycotted by West Berlin.[61] The reason, according to the sources of the time (von Lüpke 1983:30), was to demonstrate against the Wall and to prevent West German money (D-Mark) from becoming imported income for the GDR in the form of ticket fares.

The effects of the boycott set in quickly after the Wall was built. There was a clearly radical change in the behaviour of the transportation system's users and, consequently, in its organizational and physical integration into the urban space. Because no workable agreement could be reached between the *Deutsche Reichsbahn* and the West Berlin Transport Cooperation (BVG) - as operators of bus and subway services - the West Berlin politicians decided to ignore the physical existence of the *S-Bahn* as much as possible by duplicating its services with their own bus and subway services. In so doing, the so-called ´ghost train´ structure began to have its effects.

[61] The Deutsche Reichsbahn Society (often shortened to the acronym: DRG) founded in 1927 as a state company for the operation of railways in the German Reich and renamed in 1937 to Deutsche Reichsbahn (short DR).

4.2.2 The emerging urban transportation space

4.2.2.1. Complex dialogs of varying urban interests: The dislocated role of the Stadtbahn

The most ambitious change to the *S-Bahn* network made by the GDR, was the construction of a new peripheral ring line to circumnavigate West Berlin. The realization of this plan began with the gradual disconnection of East and West Berlin rail traffic in 1951. The network, henceforth, was successively divided (Kuhlmann 2006:64). At first the plan was developed as the extension of radial lines to the outside of East Berlin, which were to be connected with a new radial line reviving older train stations and train tracks in GDR territory. The next step was the shutting down of head stations in the western territory, such as *Anhalterbahnhof* and *Lehrterbahnhof*, and *Nordbahnhof* for the long-distance train traffic and those serving the outskirts. In 1952, the DR made electric power modifications to the tracks in East Berlin at *Pankow* and *Schönhauser Allee* stations to connect to the new periphery ring line.

The development of the new 23.7 km long radial line, turned out to be a massive undertaking with all the new bridges, rail lines and transport paths that had to be constructed. The ring structure was single-tracked, only later to be technically overhauled and rebuilt as a double-tracked network in 1958. It was initially only intended for the transportation of goods. In 1951, however, the line was developed to connect the main stations in the East, *Ostbahnhof* and *Lichtenberg*, for passenger travel (Kuhlmann 2006:61). In February 1952, once the passenger train circuit around West Berlin was in operation, passage to GDR territory by train was denied for West Berliners. In the same year, *Friedrichstrasse* station was expanded with four more tracks. During the next year, trains coming from West Berlin would arrive on tracks 3 and 4, while the GDR through-trains would use tracks 5 and 6. Later, this division functioned independently as a border crossing point. From 1953, GDR intercity and regional trains ended and started from stations outside of the western territory. For trains coming from the GDR into West Berlin, a switchback was arranged to allow their return. The physical disconnection of Berlin's inner-city, argued Kuhlmann, was first made possible by the transportation system (Kuhlmann 2006:66-67).

´Durchlaufzüge´ between East Berlin and GDR through West Berlin

In the 1950s, the DR developed other types of routes, unique in that they offered only partial connections. Journeys from East Berlin to the GDR, for example, through parts

of West Berlin, were made on the *Durchläuferzüge*. These trains connected routes in the eastern sector of Berlin with their final destinations in the GDR without stopping in West Berlin territory. Examples were the lines to Potsdam (with no stopping between *Friedrichstrasse* and *Griebnitzsee*) and *Oranienburg* (with no stopping between the *Nord Bahnhof* and *Hohen Neuendorf*). In 1954, the DR published timetables for the traffic in West Berlin territory (W) and for the GDR (D). In 1958, access to the trains on the outer ring that circumnavigated West Berlin was available only to Communist party members of the GDR. The completed new outer ring and the girdled West Berlin train traffic provided the precondition to dividing the transportation system completely. The consequence of the division of East and West Berlin with the building of the Berlin Wall on the night of August 12th, 1961 was that the *Stadtbahn* was dramatically divided into an eastern and a western part (Kuhlmann 2006:68).

Only 3.9 % of West Berlin passengers used the network, despite its broad span of 145 km in 1976, which surpassed the new underground network of the *U-Bahn* by 50 km (von Lüpke, 1983:31). This brought about a recurrent discussion among citizens, politicians, scholars and administration on both sides. In West Berlin, the discussion revolved around how reasonable it was to stop the boycott and to establish a fare agreement between the DR and the BVG. The main contention behind this question was the interrelation between traffic and city structures and the integration and modernization of the *S-Bahn*.

> *"To what extent can an S-Bahn structure, suited to an "old" city structure, be adapted to a "new" city structure? Conversely, to what extent can a "new" city structure in its future development be orientated towards an "old" S-Bahn network?"*[62]

The discussion shows that, at least in terms of intentions, the general aim of integrating and modernizing the *S-Bahn* had gained entry into West Berlin party policy programs and had become an objective of planning projects by the West Berlin City Administration.

4.2.2.2. The Stadtbahn development

In East Berlin, the *Stadtbahn* remained connected to the city's transportation system and its urban layout. Growth in the urban area took place in accord with the general

[62] von Lüpke (1983), p.31

layout of the *S-Bahn*. Even after the disconnection from West Berlin the *S-Bahn* system expanded with the installation of new radial lines. While the GDR managed long-distance transport with the new outer ring and the radial lines to other major cities in the GDR like Leipzig and Dresden, long-distance traffic for West Berlin was managed in an unavoidably complex manner. The radial structure in the East was, nonetheless, rendered dysfunctional, given that the rest of line was in the West and that the structure neglected its relationship with the subway and long-distance networks. The long-distance routes were disconnected between the sector boundaries of West Berlin and the GDR. Due to this the *Stadtbahn* lost its important role in articulating long-distance and metropolitan traffic into one system. Only train routes with stops in both East and West Germany were allowed to transit the route of the *Stadtbahn*, for example Paris - Moscow or Stockholm - Bucharest. In addition, all the DB transit trains from the Federal Republic of Germany accessed West Berlin through the *Stadtbahn* line and stopped at *Zoologischer Garten*, the small central station in West Berlin, although this traffic was regulated by the GDR. The train traffic from the Federal Republic of Germany to West Berlin increased successively; its main cargo being raw materials, coal and oil. In 1964, 1.5 Million tons travelled weekly in two or three convoys, 60% of this load being coal and 26% consisting of building materials.

Furthermore, with West Berlin now disconnected from its surrounding territory, the *S-Bahn* could no longer fulfil its important role of providing services from the outskirts to the inner-city and from the recreational zones into the immediate city vicinity. The ring railway was divided between *Gesundbrunnen* (West) and *Schönhauser Allee* (East), and between *Sonnenallee* (West) and *Treptower Park* (East). This meant that while the western railway ring kept operating as a half ring (*Gesundbrunnen - Sonnenallee*) the eastern railway was extended onto radial structures (e.g. *Friedrichstrasse* to *Ostkreuz* and *Bernau*) and onto tangential ones (e.g. *Ostkreuz* to *Bernau* and *Königs Wusterhausen*), connecting the periphery of East Berlin and the other cities. All the major outskirt connections towards West Berlin where closed down. After these closures, the 'Capital of the GDR (East Berlin)' was accessible only from the western hinterland on the outer ring.

The contrasting development of mass housing areas in East and West Berlin

The analysis of post-war housing development in both East and West Berlin is important in evaluating the *Stadtbahn* as part of the transportation system in East and West Berlin because it is a product of conflicting interests. The post–war housing

projects demonstrate the amount of importance given to this form of public transportation and the role it would ultimately play in the urban landscape. Already by 1962 *Schönefeld*, the main GDR airport had been connected to the *S-Bahn* network, which had been extended southward to reach the terminal. This significant network enlargement spurred the development of new residential areas in the 1980s. These new districts used the *S-Bahn* network to reach the city. The line and its stations opened before the housing projects were finished and were used by the construction workers. From 1976 to 1982, the old *Wriezener* train line was rebuilt to become a new *S-Bahn* line reaching *Marzahn*, a massive development area in the northeast of Berlin. From 1984-85, a new *S-Bahn* line along the outer ring opened to connect *Hohenschönhausen* housing areas and *Hellersdorf*.

In contrast to West Berlin, the *S-Bahn* network remained the primary mode of transportation on the eastern side of the Wall. East Berlin's population remained highly reliant on the *S-Bahn*, particularly after plans in the 1970s to develop an underground network were discarded due to insufficient finances. Furthermore, the *S-Bahn* in East Berlin serviced the industrial centers e.g. *Oberschöneweide*, *Narva* and *Treptow*. By the end of the 1950s, East Berlin's development was mainly focused on large-scale housing projects, which were always planned with good connections to the existing *S-Bahn* network. Into the 1970s, new lines were being built to interconnect the new settlements (after *Marzahn*, *Hohenschönhausen* and *Hellersdorf*) with the urban landscape. Their spatial plans were laid out in terms of integrating stations and key traffic points. The first example was the new housing complex on *Karl-Marx-Allee* built in 1959. Plans for the new *S-Bahn* station *Jannowitzbrücke* were set for the surrounding area. This station was planned to have a close spatial relation to a new commercial axis of retail shops. The most important public and cultural facilities, like the restaurant Moscow, the cinema Kino International and the Hotel *Berolina*, were planned to be in the vicinity of the station.

The S-Bahn and the new residential district in West Berlin

In contrast, in West Berlin preference was given to the increased use of the *BVG Untergrund Bahn* (*U- Bahn*) subway network, which was expanded considerably in the 1960s (von Lüpke 1983:30).Transportation network, commercial activities and the localization logic in West Berlin were configured without including the *S-Bahn* and *Ringbahn* as part of the transportation network. Their physical existence was marked by the morphological city development of the area around the *Ringbahn* train lines

along with a few immediately adjoining outlying areas, which can be distinguished by its high building density (1.2 to 4.0 inhabitants per hectare), and a distinctive mixture of uses. Flats, retail shops, private and public services and commercial enterprises were all contained within the *S-Bahn* ring and the immediate bordering areas were developed with urban renewal housing projects.

The areas outside the ring distinguished themselves from the inner ring area by their predominantly open building form and lower building density (0.2 to 1.5 i/h) as well as a less mixed nature of uses (von Lüpke 1983:38). The areas outside of the encircled region predominantly consisted of a few large single housing areas, while big industrial areas still existed adjacent to the *Ringbahn* tracks. In 1970, these industrial areas provided working places for approximately one of every four West Berliners. In some cases, as with *Siemensstadt*, employers developed new housing projects to provide a better connection between working and housing areas. West Berlin maintained its previously existent polycentric structure. Multiple nodes of urban activity equipped with offices, retail shops and other commercial activities were oriented towards the main traffic streets. This pattern was later followed during the expansion of the underground network.

Thus, new subway lines considered as substitute *S-Bahn* lines were developed in direct competition with the *S-Bahn*, creating a sort of duplication. A new public transportation plan was proposed in the form of the so-called '*200 km Plan*'. This foresaw the mass redevelopment of the subway network via extensions, renewals of several subway lines and even the building of completely new ones. The newly built subway lines generally had fewer interchanges with the already installed *S-Bahn* network. Even the names of subway stations differed from those of the *S-Bahn* stations, although they were in close physical proximity (e.g. *Wilmersdorfer Strasse* (Subway) / *Charlottenburg* (*S-Bahn*)). Similarly to the East most important suburban housing developments were built in West Berlin in the 1960s and 1970s. Although these were comparable to the residential projects in East Berlin the most noticeable difference was the lacking proximity to the existing S-Bahn network in the West part of the city.

4.2.3 The production of urban space with the railway in the divided Berlin, 1961-1985

This section elaborates on the changes in the urban fabric brought about by the *Stadtbahn* project during the industrial era of Berlin between 1961 and 1985.

In East Berlin, the *Stadtbahn* remained connected to the city's transportation system and its urban layout and even expanded with the installation of new radial lines. Growth in the urban area took place in accord with the general layout of the *S-Bahn*. The post–war housing projects (*Marzahn, Hohenschönhausen* and *Hellersdorf*) and competition analyses (*Stalin Allee* and *Alexanderplatz*) of the time demonstrated the degree of importance given to the form of public transportation and the role it would ultimately play in the urban landscape. Already by 1962 *Schönefeld,* the main GDR airport had been connected to the *S-Bahn* network, which had been extended southward to reach the terminal. In West- Berlin due to the management of the transportation network by the GDR and the successive disconnection of the *Stadtbahn* network to the outskirts, other cities in East and West Germany and East- Berlin, a divergence between the *S-Bahn* and the development of important areas in the city became evident. The S-Bahn was replaced by the subway during the development of new housing (*Hansaviertel, Gropiusstadt*) and production areas (*Siemensstadt*) and so-called 'ghost stations' resulted. Transportation network, commercial activities and the localization logic in West Berlin were configured without including the *S-Bahn* and *Ringbahn* as part of the transportation network. The new subway lines substituted the *S-Bahn* lines and created a sort of double netwrork, such as the subway Plan 200 km. In West-Berlin new urban developments were based around the new subway system, ignoring the presence of the S-Bahn to a large degree. In the context of project development, the discussion will focuses on the results for the railway elements taking into account the changes in:

a. the character of the viaduct
b. contrasted in a broader sense to the development of the stations and the principles of the station square

4.2.3.1. The character of the *Stadtbahn´*s viaduct: Closing the *Stadtbahn´*s arches

> *„Das Regenwasser sickert permanent durch den Eisenbahnschotter in die Gewölbe und nagt seit Jahrzehnten, so dass sich Tropfensteinzapfen bilden und auch der härteste Klinker weichen wird. „ (Binger 1984, in: Boberg, Fichter, Gillen, 1984:113)*
>
> *(„The rainwater permanently seeps through the railway rubble ino the arches and erodes for decades, so that droplets form rock cones and even the hardest brick becomes soft")*

During World War II, all leases for the viaduct spaces were terminated. Because the structure had proven itself bombproof, some viaduct arches served as bomb-shelters during air raids, while others housed important war institutions in need of extra

protection. After the war, the tracks were quickly rebuilt for transportation purposes. The viaduct remained largely unchanged, and its position throughout the two world wars remained the same. Trading and business life developed in the arches with unprecedented continuity during the first fifty years despite the severe damage to and destruction of the city during World War II (Boberg, Fichter, Gillen 1984:109). However, the currency reform of 1948 and the subsequent boycott of the *S-Bahn* brought viaduct activities to a halt.

'No taxes to West-Berlin and no subventions for the GDR'

The *Reichsbahn* administration imposed that in both East and West German territories railway-related businesses could only use East German currency and that Western currency could only be used to purchase goods not required or accepted in the GDR. In return, this also meant that the GDR currency could not be refused in West Berlin. After the passing of Law 111 Ziff.2, the Soviet military government recognized the *Ostmark* as the only legal tender, and the railway was no exception—a measure that, elsewhere, would be grounds for lease termination.[63] Massive inspections were conducted to shut down operations using West German currency. Until 1949, the *Reichsbahn* had accepted rent payments and charges in West German Marks. The situation was made even more difficult when at the end of 1949, based on the *Magistralabschluss* decision of October 12th 1949, the rent payments from West Berlin were put under a trust administration, which managed the payments of the *Reichsbahn* in the American, British and French sectors. The reason was that the *Reichsbahn* was defaulting on tax payments, and the West Berlin tax authorities had seized all rent payments.

Trade related problems caused by the political circumstances brought massive changes to viaduct arch activities in both East and West Berlin. Rental space demand dropped and the *S-Bahn* boycott reduced the *Reichsbahn* administration's interest. The *S-Bahn* service shrank to a minimum of operational safety. Modernization of the *Stadtbahn* and its viaduct was so minimal in the divided city that the building structure stayed the same as it had been before the Second World War (Boberg, Fichter, Gillen 1984:109). The *Stadtbahn* arches remained of little commercial interest in both East and West Berlin. They also suffered from a lack of maintenance and renovation by the

[63] See Privatarchiv of the company PALM quated in: Boberg/Fichter/Gillen (1984), p. 113

East German railway company management, which managed the *S-Bahn* until 1985. The arches' former function—as accommodation for diverse uses in the urban space—therefore failed to redevelop. Several areas of formerly highly developed arches such as *Savingypatz*, *Bellevue* and *Friedrichstrasse,* showed the limited uses of the viaducts under the new trade conditions in the divided city. When the *S-Bahn* management was transferred to the BVG in West Berlin in 1985, some arches—such as those around *Savingyplatz*—were renovated and reopened, as the survey on the register shows. [64]

Savignyplatz

The unique use of the *Savignyplatz* arches as sculpture workshops was conducted until 1933, when the last workshop was closed. The light fixture shop Arno (founded in 1928) held on to its central location at *Savignyplatz* and its clientele for many years. It was one of the few shops to survive World War II.

Bellevue und Tiergarten

For decades, the viaduct arches and the central market were linked. In the 1920s, the wholesale of meat was located in the eastern part of the city, primarily at the central market. However, this is also where, in 1948, the Berlin meat supplies blockade was staged. After World War II, the meat wholesale relocated to the arches in *Lüneburg* Street (*Tiergarten* district), and the fish and meat markets between *Uhland* and *Grollmann* Streets. In the 1970s, the bulk of the fish wholesalers settled inside *Stadtbahn* arches in *Moabit* (*Tiergarten* district). While fish sales grew, meat sales dropped. The reason for the decreasing meat sales was the construction of meat wholesale centers in *Tiergarten* in1967, which drew business away from the viaduct arches. In 1956, the cigar company PALM reopened in the arches, after losing its contract in 1943 because of the war. Nevertheless, the company closed shortly after being reinstalled in the viaducts due to a loss of profits that was linked to the *S-Bahn* boycott. PALM restarted its activities again in 1976 in the arches. In the divided city, some of the uses of the arches around the *Tiergarten S-Bahn* station in West Berlin

[64] See for detailed outline of the renting situation the viaduct register in the Annex.

were linked to the flea-market at *Strasse des 17. Juni*—such as the pub *Tiergarten Quelle* as well as several nightclubs.

Friedrichstrasse and Mitte

Mitropa, the state-run catering company, managed several of the arches close to the Museums Island. However, the majority were used as large storage boxes, where old artefacts were kept further east of the *S-Bahn* station *Jannowitzbrücke* (e.g. redundant military artefacts like tanks from the Second World War). However, at Arch number 102 in East- Berlin a small pub opened.

4.2.3.2. The contrast to the principle for the station and square: The marginalization of the *Bahnhofsviertel*

The phenomenon of the marginalization of the *S-Bahn* began to affect the areas around West Berlin *Stadtbahn* stations as well. The marginalization of the areas in the 60s and 70s, as already explained, is believed to have been caused by the shift away from public and towards individual transportation. This meant the railway station and its surroundings suffered massive financial losses. In West Berlin's stations, this trend was particularly strong due to the general boycott of the stations. *Zoologischer Garten* Station and its surrounding, which experienced the most dramatic drop in public space quality, provide the best example. Although the station was the 'main station´ for West Berlin, it attracted the lower social classes. The preference for car ownership led to rail-transportation only being attractive to the poorer populations who could not afford a car (von Gerkan 1997:39). Thus, it was forced to adapt to the lower purchasing power of this environment. Restaurants were replaced by vending machines and it became a shelter for the homeless and housed a black market for cigarettes. The high numbers of people moving in and out of the station, far more than the station attracted for travelling purposes, provided anonymity and offered an ideal setting for illegal trade. In addition to the black market, the drug trade also settled around the train station, and the location soon turned into the center of drug dealing in West Berlin. Marginalization then spread to the surrounding area: bars, trinket shops, peepshows, prostitution and drug dealing were the results. In the eastern part of the city, such phenomena did not take place to the massive degree experienced in West Berlin. Along the north-south *S-Bahn* line, all of the stations (*Nordbahnhof, Oranienburger Strasse, Unter den Linden* and *Potsdamer Platz*) except *Friedrichstrasse* were closed as stops, and passenger entrances were boarded up. The public called them 'ghost stations'. These *S-Bahn*

trains served only the West Berlin public and passed straight through the East Berlin stations, the ghost stations, without stopping. *Friedrichstrasse* was the only exception on the north-south train line. It also became the final West Berlin station on the east-west line, making it the primary point for public interchange between East Berlin and West Berlin. *Friedrichstrasse* was the only public transportation border crossing between East and West Berlin. The station was also the end-station for the *Stadtbahn* in West Berlin and served as the point of departure for the *Stadtbahn* line through East Berlin.

Leading up to the Second World War, *Friedrichstrasse* was one of the most important junctions in the entire Berlin public transportation system. From August 13th 1961 until October 3rd 1989, the day of re-unification, the *S-Bahn* station *Berlin-Friedrichstrasse* served as a border crossing point between Eastern and Western sectors. The station itself was separated into Eastern and Western parts as a continuation of the Berlin Wall. The station square of Friedrichstrasse was a strictly controlled zone and incorporated the famous 'Tränenpalast' --the border point for visitors to East Berlin territory. In West Berlin, the *S-Bahn* in general could be avoided as much as possible through the introduction of parallel bus and subway lines. The best known of these were the U7 and U8 underground lines. [65] In addition, interchanges between the *U-Bahn* and *S-Bahn* were no longer available (e.g. *Tempelhof*) or were poorly constructed (e.g. *Charlottenburg* Station, *S-Bahn* and *Wilmersdorfer Strasse*, subway). The stations, which were built in close proximity to each other, remained unconnected. Instead in 1987, during the 750 year anniversary celebration for East Berlin, a new station building was opened at *Ostbahnhof* (East Station), and the station was renamed '*Hauptbahnhof*', (Central Station). As was the case at *Alexanderplatz*, this station developed into a public space well incorporated within the surrounding neighborhood.

[65] By 1980, West Berlin shows in comparison to the three other large cities in Germany (Munich, Hamburg and Frankfurt), the highest number of old people (22.4 % in comparison Munich 15 %). Concerning inhabitant's density only Berlin is surpassed by Munich (West Berlin 3,950 population/km2 to Munich 4,189 population/km2). The highest number on poor people (24.1 gross domestic product in 1000 DM (according to 500 €) per capita concerning Hamburg's 36.6%) The highest population decline: -4.46 % to Munich -1. 21 %. These numbers correspond to transport date such as the lowest car ownership and car owner percentage. As a reason, sources see the large number of young and older people. A further consideration is West Berlin's dense transport network, primarily the underground train with 0.53 km per 10 000 inhabitants (Lüpke 1983).

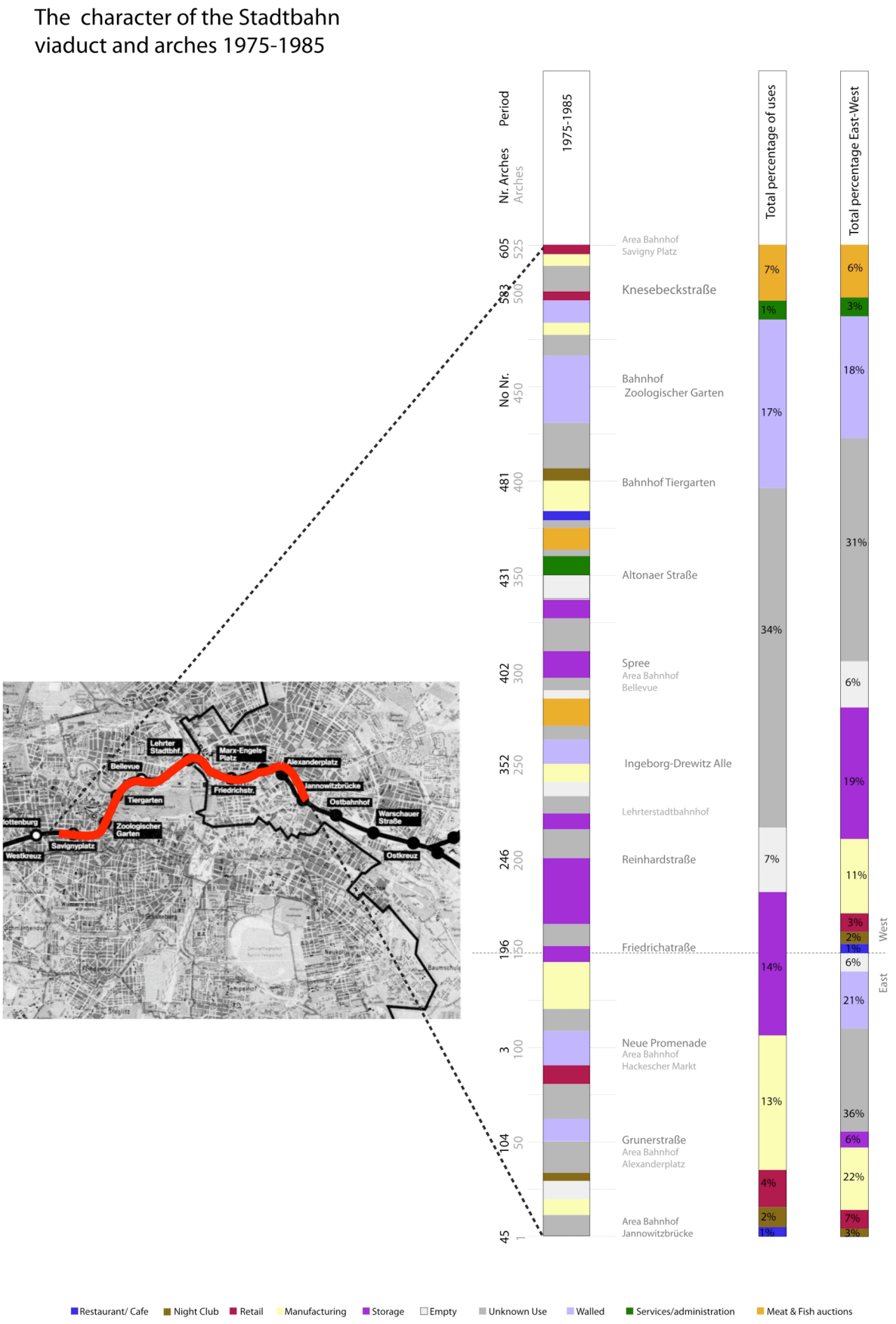
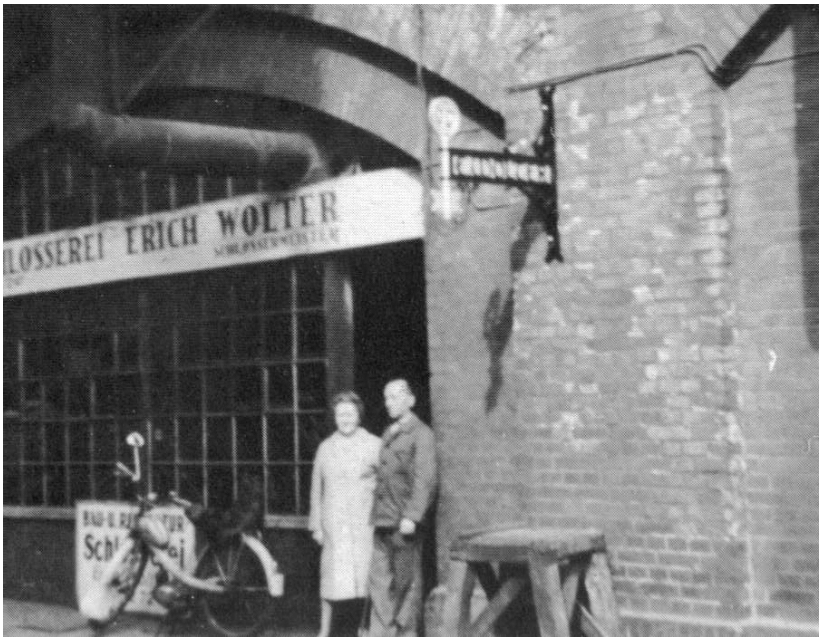


Figure 4-16 The production of urban space in Berlin *Stadtbahn* space between 1975 – 1985: The uses of the viaduct arches (drawing by the author).

Figure 4-17 Uses in the arches during the boycott. (Source: Boberg, Fichter, Gillen 1986)

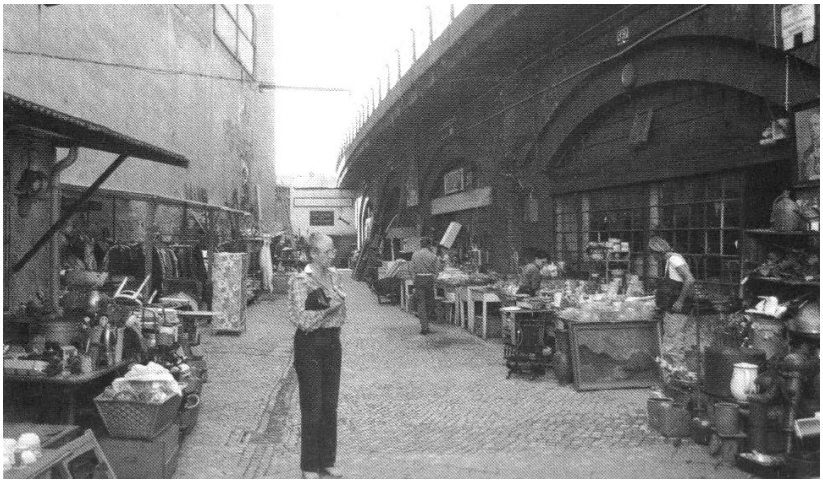
a) and b): The arch Nr. 366 was rented to the company Wache and was one of the last stores for meat wholesale in Moabit. Meat sellers buyingsupplies in the early morning hours in 1962.



c): 1967, the locksmith couple Wolter rented arch 137 at *Savignyplatz*. After the couple retire the business was closed.

Figure 4-18 Uses in the arches during the boycott (Source: Binger, in: Die Berliner *S-Bahn*, 1984)

a) The arches Nr. 127/128 were rented to *ARNO Lampen*. The business was set up in 1920s and closed in 2007. Today the arches are rented to a Restaurant.



b) 1984, The flea market at *Savignyplatz, Fasanenstrasse* close to the *Kempinski* Hotel. The business was closed in 2009.

Figure 4-19 The station Alexander Platz in the East Berlin 1984. (Sources: Cabrini, in: Alfaro d´Alençon 2007).

During the devision of the city, stations were rebuilt and new built in the GDR.

Figure 4-20 The stations in West Berlin 1983. (Sources: Cabrini, in: Alfaro d´Alençon 2007).

Station Tiergarten in West-Berlin marginalized due to the mutual Boicott and the desconnection of the railway system from the surrounding territory.

b) Stations in West Berlin running over the former Lehrterbanhof. This station stands in the former inner-area of Berlin close to the wall

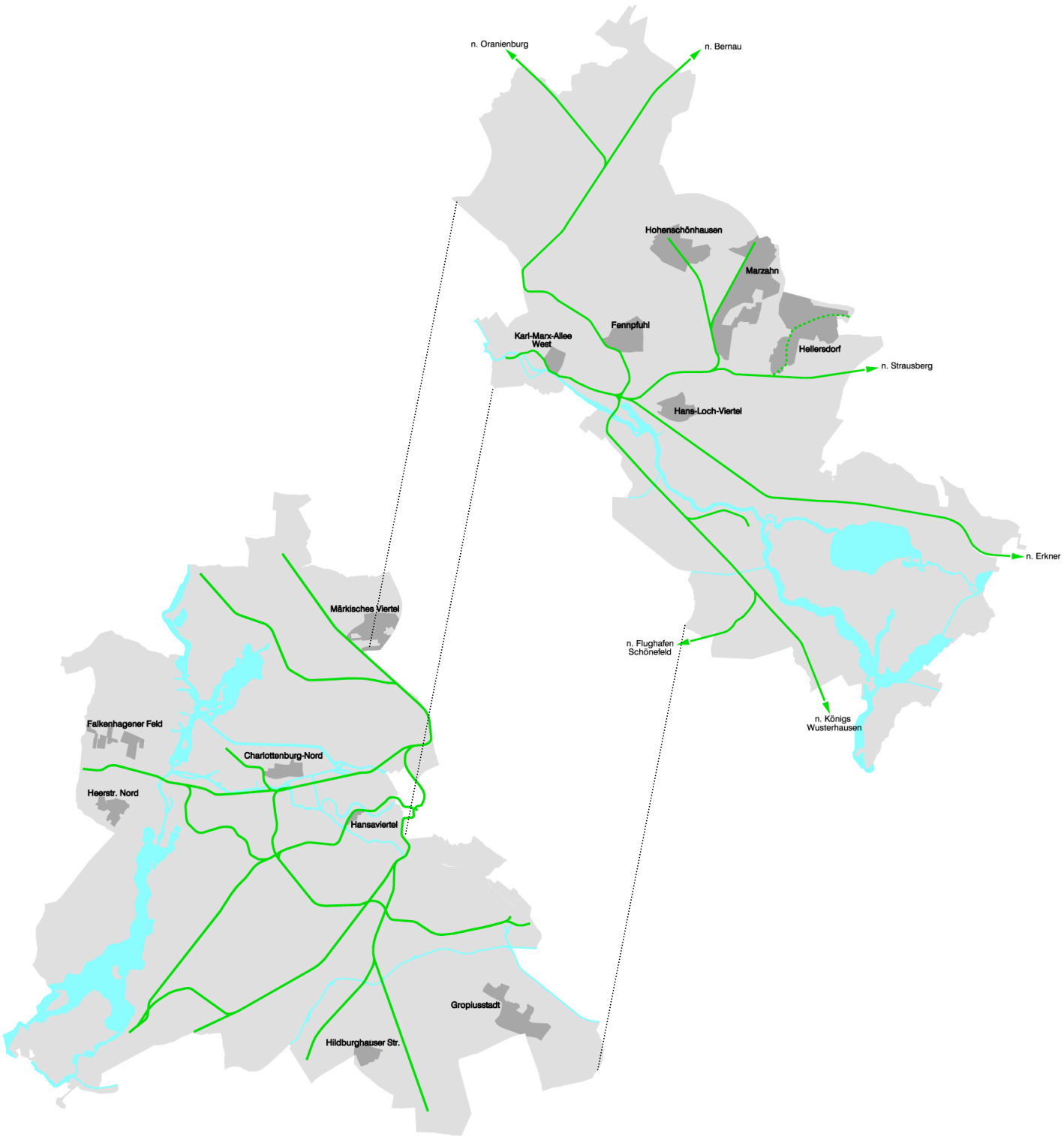


Figure 4-21 Train lines in East and West Berlin and the new housing settlements. (Source: Cabrini, in: Alfaro d´Alençon 2007).

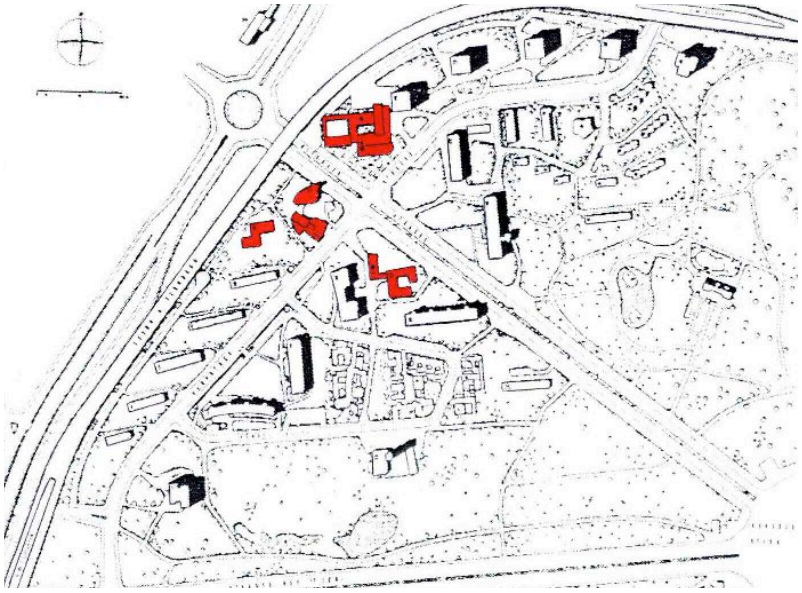
a) The picture shows the close relationship between the *Stadtbahn* lines in East Berlin and the new mass housing areas. After the example set by the *Marzahn* housing settlement, most of the new areas where developed in close relationship to *S- Bahn* stations.

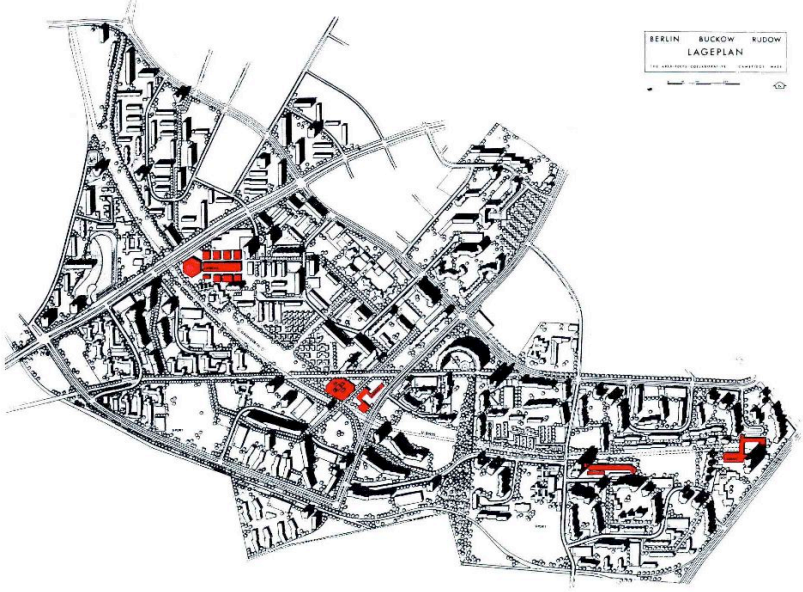
b) The Stadtbahn lines in West Berlin. The picture does not show the same kind ofclose relationship between the Stadtbahn lines and the new dense housing areas found in East Berlin. The new settlements in West Berlin their locations were orientated towards the subway system.

Figure 4-22 The different urban dynamics around the *Stadtbahn* in Berlin (West) and Berlin (East) in 1960 (Source: Cabrini in: Alfaro d´Alençon 2007).

East Berlin's development was mainly focused on large-scale housing projects, which were always planned with good connections to the existing *S-Bahn* network. The first example was the new housing complex on Karl-Marx-Allee built in 1959. In contrast, in West Berlin preference was given to the extensions of the BVG subway network in the 1960s.

Transportation network, commercial activities and the localization logic in West Berlin were configured without including the *S-Bahn* and *Ringbahn* as part of the transportation network as seen in City West or the new development of *Hansaviertel* in the *Tiergarten*.





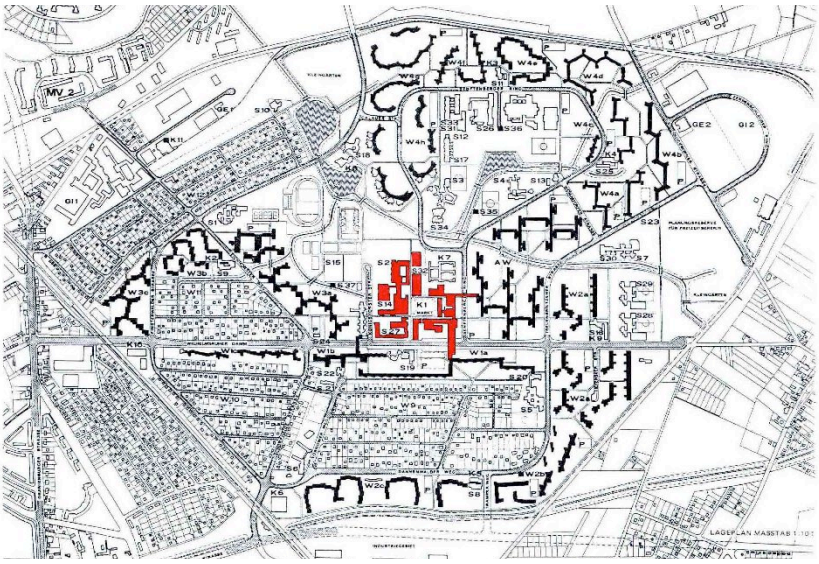


Figure 4-23 Train lines in West Berlin and the new housing settlements. (Source: Alfaro d´Alençon 2007, drawing Cabrini).

The Stadtbahn lines in West Berlin. The picture does not show the same kind of close relationship between the Stadtbahn lines and the new dense housing areas found in East Berlin. The new settlements in West Berlin were orientated towards the subway system.

a) *Hansaviertel*, planned 1957. This quarter was built for the international building exhibition and was expected to serve as a new model for architecture and urban planning. Due to its exemplary nature it is interesting to observe the insignificant role the nearby *S-Bahn* station *Tiergarten* and the viaducts played. As is typical for mass housing settlements, a new center (with commercial and cultural offer) was planned close to urban transportation. However, the subway line was built a few years later. This means that the center was not planned around the existing *S-Bahn*, but around the non-existent subway line.

b) In 1962 the construction of *Gropiusstadt* began in the periphery of West Berlin. Since the connectivity to the *S-Bahn* was not considered, a new transportation mode was required. The new subway line U7 would replace the *S-Bahn*. In addition, the four parts of the new centers for the housing area were built around the new subway station.

c) Märkisches Viertel. The area was defined by the northern ring line and the Berlin Wall in the east. Although, the S-Bahn station Wittenau was close to the area, the planning was completed without its integration. The master plan foresaw a new subway station, the extension of today's subway line U8. This extension was never built and the mass housing area **remained poorly connected to Berlin's city center.**

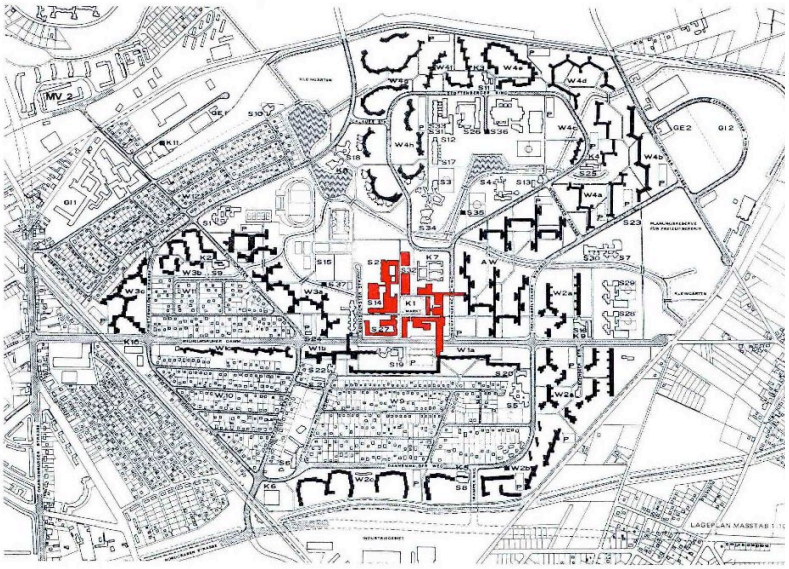
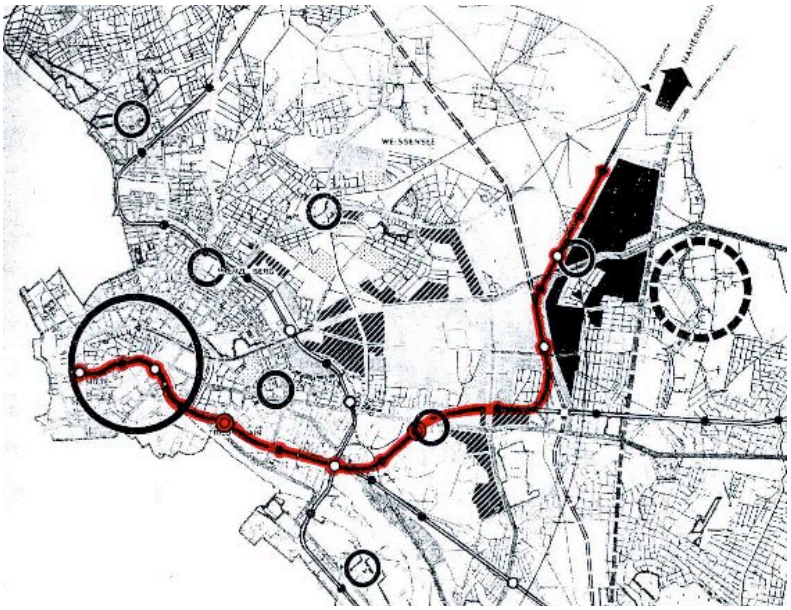
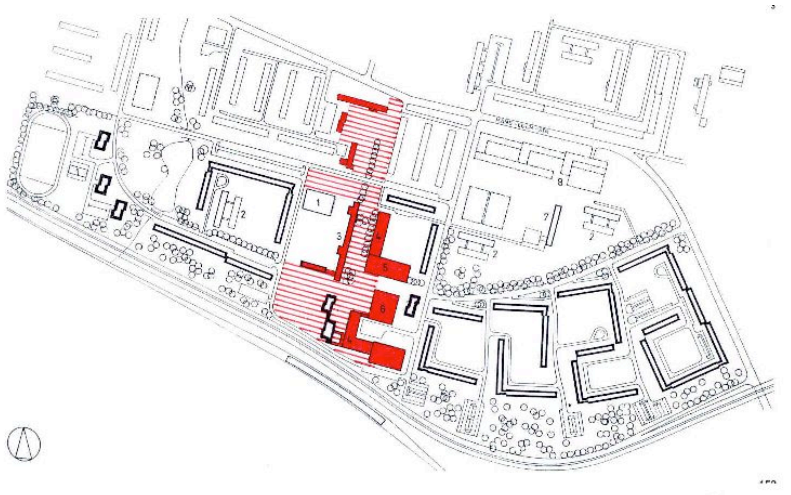


Figure 4-24 Train lines in East Berlin and the new housing settlements. (Source: Alfaro d´Alençon 2007, drawing Cabrini).

a) Hans-Loch Quarter (completed 1972) located in the outskirts of East- Berlin between *Ostkreuz* and *Erkner*. The already existing train station Hans Loch was moved a few hundred meters towards the new housing area. It became the central area for the housing district equipped with shops, schools, sports facilities and pedestrian areas.



b) The new *Alexanderplatz* in East Berlin. Like the competition for a shared capital city in West Berlin, the East German Government was faced with the task of integrating the *Stadtbahn* into the new planning proposal. Close-up of an example of mass housing and its spatial relation to the transportation system.



c) In 1979, the construction of the large housing area *Marzahn* began. The plan foresaw a close relationship between the development of housing, industrial areas, public space and the new train station *Marzahn*. This station also worked as a center equipped with residential towers and pedestrian areas. This example became the *Marzahn* model and was copied in the 1980s in other peripheral housing areas like *Hohenschönhausen*, in the outer ring, and *Hellersdorf*, north of the *Ostbahnhof*.

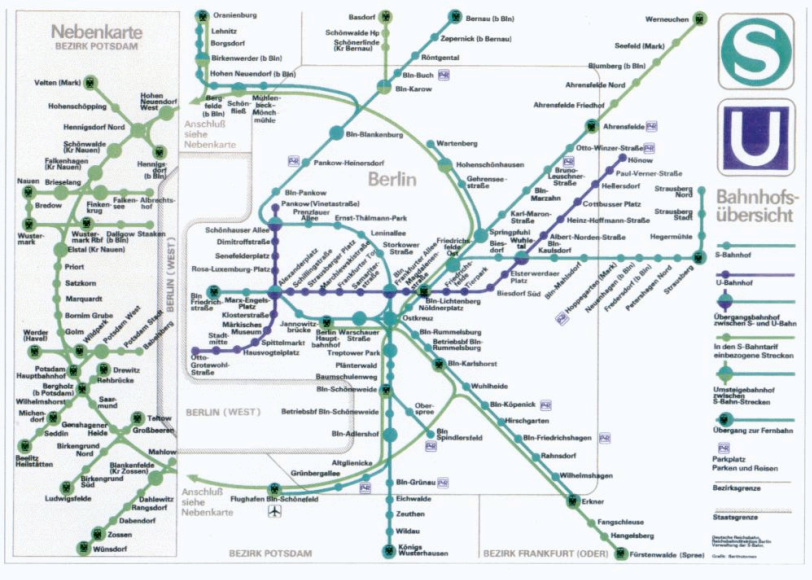
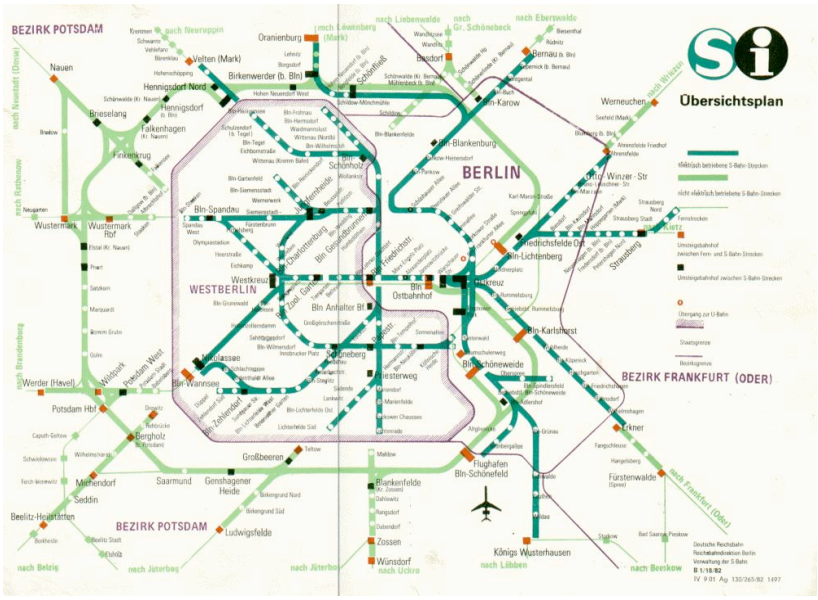


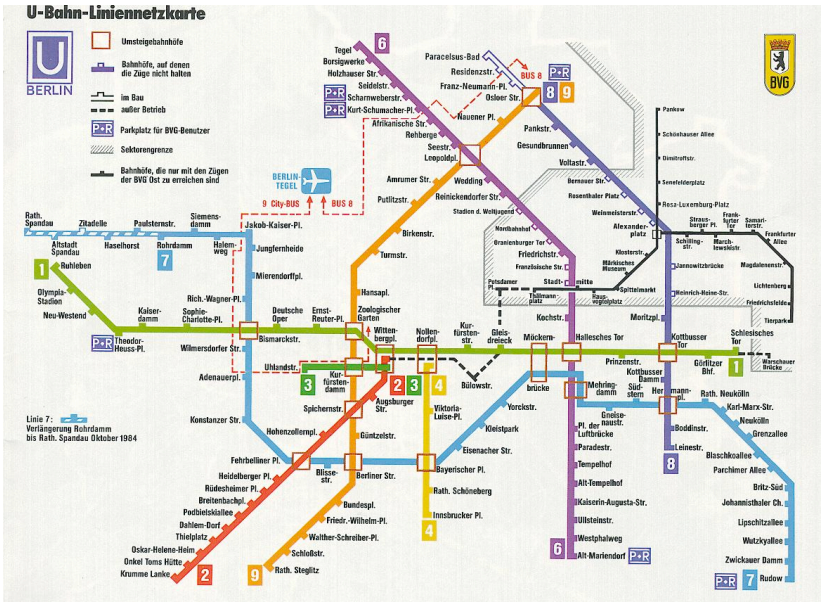
Figure 4-25 Public transportation network in the divided city. (Source: Cabrini in: Alfaro d´Alençon 2007).

This graphic representation of public transportation networks from East RB and West BVG shows quite clearly the approaches to their transport structure. The division of the city resulted in transportation maps outlining only parts of the network and neglecting the other modes of transportation.

a) The *Reichsbahn* printed maps for West Berlin showing only the transportation mode that they provide-- the *S-Bahn*.



b) GDR network maps show a shrunken West Berlin



c) After the division the BVG (West) produced its own maps, printing only the subway network in East and West with ghost stations but without the *S-Bahn* network.

The production of urban space in Berlin
Stadtbahn space between 1963 - 1985:
Planning, hybridization, and specific development patterns of railway space

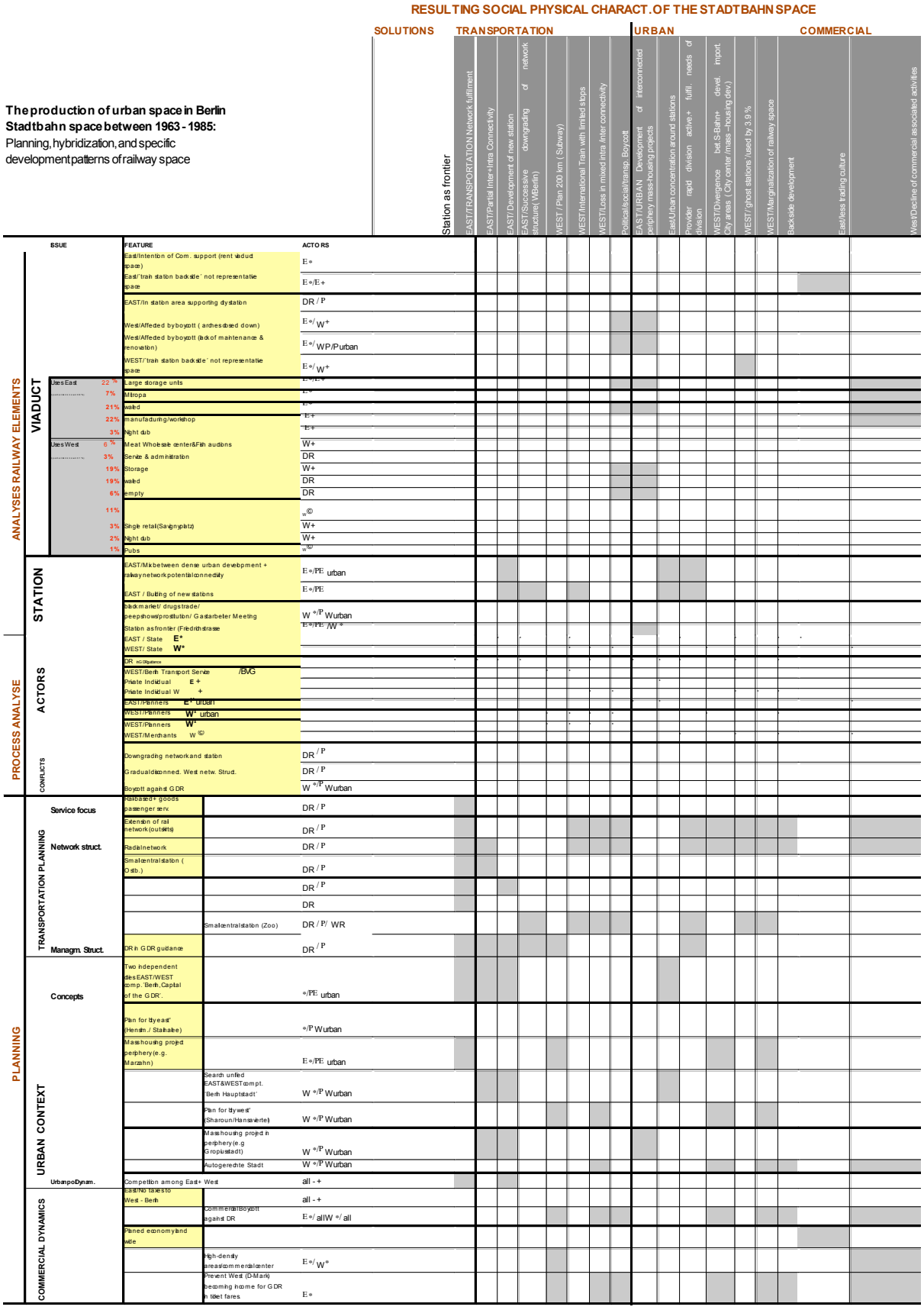


Table 4-2 The production of urban space in Berlin *Stadtbahn* space between 1963 and 1985: its planning, hybridization, specific development patterns of the transportation network, urban development related to the railway elements (viaduct and stations)

4.3 Searching for the center with the train: The current urban development in Berlin and the role of the Stadtbahn 2000 - 2009

Section 4.3.1 provides insight into the current spatial transformation of the *Stadtbahn* space. Following the outline of the previous sections, literature review will reveal the general proposals for Berlin's transportation and urban planning concepts and commercial dynamics related to the *Stadtbahn* project. Section 4.3.2 provides the research on the emerging development of the *Stadtbahn* space, such as its process development and its conflicts, through popular newspaper articles and stakeholders debates. Transportation development, urban practices and commercial activities are reflected trough the empirical case study research. The final section 4.3.3 reflects on the specific development of the network and the railway elements, such as the viaduct and the trends in the station and station square of the *Stadtbahn*.

4.3.1 Planning concepts for the Stadtbahn

4.3.1.1. Transportation planning concept '*Pilzkonzept*' and the *Stadtbahn*

This section explores the transportation planning concept '*Pilzkonzept*', (transportation concept for the rail service in Berlin) after the unification of Berlin's territory. Due to the awakened environmental consciousness that arose particularly during the 1990s in Germany and Europe, public transportation planning achieved a new level of popularity in transportation planning circles and far beyond, in the agendas for new sustainable urban developments (see 2.1.1). This trend brought massive restructuring proposals for the refurbishment of the public transportation development and the railways. For Berlin, this would represent a particular intense phase of significant restructurings. As a reminder, for decades (roughly from the beginning of the Cold War until 1989), the net structure of the *Stadtbahn* had been developed with a lack of centrality to any specific area. In a state of severe disrepair during the division, especially in West Berlin, *Stadtbahn* network services in the East ran independent of those in the West. Traffic to and from West Berlin was primarily served by air and road, and secondarily by rail. Meanwhile, Inter-City and Regional-Express trains in the former eastern part functioned as entities linking East Berlin with surrounding cities and others in the GDR.

In the context of the planned restructuring of Berlin's transportation provision an additional significant parameter has been the changes in the labour market. Thus, Berlin's declining labour market in the industrial sector and its pending emergence as a service center has produced major changes forecast for the trade structure and the

provision of mobility. Until the reunification, mobility demand for Berlin was that of a labour-based city, with important industrial zones comprised of major companies like *Siemens, Borsig* and *AEG*, requiring the transportation of raw materials, people and products to the industrial areas. Today, this labour force has dwindled to only 100 000 workers, resulting in labour figures of 10% in industry and 5% in construction. The tertiary sector makes up the remaining 85% (Bohlig, 2007:228). A breakdown of the tertiary employment sector shows: hotel and transportation (10%), finance, business and services (22%) and other services (39%) (LSI 2007:248). This means that transportation demands are largely based on passenger travel today.

The transportation-planning concept 'Pilzkonzept´ for Berlin

The proposal '*Pilzkonzept´,* the mushroom concept, named after its shape, resulted from a debate in 1990 regarding the reorientation of the existing railway towards the new needs of transportation development. The goal of the concept was to connect suburban, transregional and national networks through defined points of intermodality catering to dense urban interconnectivity and providing direct access to long-distance networks. In detail, the proposal was the development of the north ring of the *S-Bahn* for international traffic (the cap of the figure) and the development of the north-south track as a tunnel (the stalk of the figure) in the *Tiergarten* area, connecting the northern section of the inner ring to the suburban line from the mushroom cap. The plans foresaw the introduction of parking areas at intermodality stations usually located in peripheral urban areas, at the north and south crossing points. The debate was integrated within Berlin's planning circles and the urban planning strategy for the city—'*Planwerk Innenstadt'* (Kuhlmann 2006:162). However, *Planwerk Innenstadt* made new provisions for passenger transportation and the government launched several policies and plans advocating sustainable mobility in 1999. The general point of the '*Pilzkonzept´* strategy was, according to general 'sustainable´ development aims, was the focus on the perfection of the network structure, specifically through the incorporation of individual car use rather than its extension. The proposal foresaw the development of inner-city transportation in its key-point outline with a shift away from the car-oriented city (mainly developed since the 1950s) to provide a 'user-friendly' means of transportation. Priority was given to the development of a public transportation system.

The target was to develop Berlin as a reference city for public transportation with a distribution split of 80% public transportation and 20% motorized individual

transportation in the inner-city. The decision was made to provide an intermodal transportation system in order to enhance quality and produce shorter travel distances, while limiting private car use. This objective was a key point in the proposal and a commitment to combat the still high number of trips undertaken with individual automobiles. This objective is supported by advocacy policies and plans for sustainable mobility, one of them being the transportation development plan MOBIL 2010.[66] This plan also aims to develop an integrated strategy in response to the future mobility needs of inhabitants. It encompasses an ambitious standard set for sustainable urban transportation, with its future committment to the maintenance of existing infrastructure instead of its expansion for more efficient uses, thereby promoting public transportation and its multimodal uses. MOBIL 2010 aims to the urban structures compact while relieving the inner-city of through-traffic and extending local public transportation and parking management. Transportation policies have been designed to promote cycling and the ecological tax reform was modified in 2003 to support the initiative.[67]

The reintegration of the transportation networks for Berlin occurred in two stages. Firstly, short after the unification, the first joint transport line map in 40 years was published. It showed improvements such as the initial refurbishment of former network links and temporary solutions. Secondly, the connection of Berlin to its hinterland was addressed with the construction of new tracks. In 2002, the suburban ring was back in full operation Kuhlmann 2006:156).

The role of the Stadtbahn in the transportation planning concept

Two models for the transportation system in Berlin were at the center of a debate by experts of the *Deutsche Reichsbahn* (*DR*), the *Deutsche Bundesbahn* (*DB*), *Deutsche Eisenbahn-Consulting GmbH* and the Berlin Senate concerning the reframing of the

---

[66] On of the initiative MOBIL 2010 is the Umweltkarte, Environmental Ticket, available as a monthly or yearly pass that can be used on buses, trams, subways, urban trains and ferries. Additional persons without additional cost can use the ticket on the weekends and after 8 p.m. The objective of this strategy is to increase the number of users of public transportation for recreational activities.

[67] The reform consists of an incremental increase in taxes on fuel and the creation of an energy tax. The additional public income is used to contribute to the lowering of non-wage labor costs so that the reform is, for the most part, revenue-neutral. The most direct influence of the tax for private car use is on mineral oil for fuel (gasoline and diesel). The tax rates on mineral oil were increased in five steps between 1999 and 2003 by 3.07 cents per liter each year, i.e. by a total of 15.37 cents per liter compared to 1998.

existing railway system to incorporate the new approaches of intermodality and centrality.

The *circular model* was based on the functionality of the ring structure, proposing that all transnational regional trains enter Berlin from the north and south directly into the existing *Ringbahn*. Junction points marked in the east and west of the urban area, *Westkreuz* and *Ostkreuz*, central points for intermodality, were set as points of interchange to the urban transportation network. The axis junction model, a second model, was based on the functionality of the existing centenarian *Stadtbahn* as the former east-west connection and the accomplishment of the incomplete north-south line, under construction since 1944. The *Pilzkonzept* was introduced for the suburban train system and combined elements of the two proposals.[68] The goal was to connect suburban, transregional and national networks through defined points of intermodality catering to dense urban interconnectivity and providing direct access to long-distance networks. This concept was not linked to the development of a central station.[69] Early plans sought to deal with the broader network in the densely built-up area of Berlin and the development of several long-distance junction stations functioning as hubs in Berlin's polycentric structure. However, the new proposal incorporates an intermodality pattern system and concentrated points, such as the new central station *Hauptbahnhof.* It was designed as an interconnecting station defined—a 'hub'—for extensive interchange, which included intermodality services such as the *Park & Ride* system.[70] Beside the intraconnectivity, the system was supposed to establish Berlin as a new central node, directly connected to other important German cities as well as to the numerous surrounding European capitals.[71]

Shortly after the development of the *Pilzkonzept* proposal and its focused outline on a concentrated network development, the initiative 'The Renaissance of the Stations´ was begun. The initiative was developed by the new railway management enterprise,

---

[68] see http://www.stadtentwicklung.berlin.de/verkehr/verkehr_in_zahlen/en/wichtige_entwicklungen/index.shtm (accessed July 15th 2009)

[69] Although, the expected capacity of passengers and the dimension of the station stated the railway company made the decision to place the central station affordable in a vacant inner-city area. Personal Communication with Mr. Heiko Jentsch from *DB Station & Service* (2009)

[70] See Senat für Stadtentwicklung (2007), p. 209. In 2007, the *Park & Ride* system in Berlin included 99 *Park & Ride* units with 9,350 parking spaces in total 66 of them had less than 100 parking spaces, while 22 of them offered 100 to 200 parking spaces, and the 11 remaining provided space for more than 200 automobiles.

[71] See www.s-bahn-berlin.de/fahrplanundnetz/sbahnhofanzeige.php?ID=119 (accessed March 5th 2009)

the *Deutsche Bahn AG,* and the German state. Its aims were to revitalize and upgrade of the stations (especially inner-city stations) and their immediate surroundings. The initiative was accompanied by a massive rebuilding of railway stations in the late nineties initiated by *Projekte 21* in cooperation with public-private partnerships between the rail system, municipalities, and further private and public interests. The conglomerations aim was to meet transportation, urban and commercial demands in an integrative planning development. The functionality of the stations selected for renovation was extended, adjoining areas were restructured and further unused railway properties were marketed for other functions (Dürr 1997:14). The aim of the planning concept was the best possible integration of the stations into the city structure. This was accomplished, for example, through construction measures such as the conversion of terminus stations into 'pass-through' stations through tunnels, and the conversion of the redundant old track system into streets. Rail property relocated to the periphery providing new uses and functions for the resulting urban space. In cooperation with the *Deutsche Bahn*, the former track spaces could offer a mixed use for living, commerce and places of work.

Projekte 21 components followed a statute including both planning considerations as well as inclusion into the city sphere. The project organized its activities in categories such as '*The dialog between old and new.'*[72] This meant that the historical building fabric (old facades, arches and glass roofs) were renovated, revealed, accentuated, and if needed, complemented with modern architecture (as with the extension of the commercial areas within *Alexanderplatz* station). This category also included:

---

[72] *Projekte 21* (1997), pp. 6-7; incorporates the planning and revitalization (Transformed around half of the 6500 German Stations) of the following stations in Germany: Outlined theme incorporated 1. The dialog between old and new: Main station in Köln, Dresden, Leipzig, Hannover, Nürnberg, Münster and in Berlin-Alexanderplatz; 2. Conversion of historical stations: *Hamburger Bahnhof* in Berlin and *Kaiserbahnhof* in Potsdam; 3. New projects: Station *Kassel-Wilhemshöhe*, Train stop in Bielefeld, Station *Berlin-Potsdamer Platz*, Station Frankfurt – Airport, *Mainstation Erfurt*, Expo 2000 – and *Messe* Station *Hannover Laatzen*, Station Stuttgart- Airport; 4. The Station as urban nucleuses: Lehrter Station in Berlin, urban surrounding planning at *Lehrter* Station in Berlin, main station Mannheim, main station Essen, main station Bonn, urban surrounding planning main station Regensburg, *Nordseepassage* and main station *Wilhelshaven*, station *Berlin-Gesundbrunnen*, long-distance railway station *Berlin-Spandau*, main station Potsdam, station Hamburg – *Blankensee*, *Stuttgart 21, Frankfurt 21, München 21*; 5. Station 2000: Travel service point (*Aschaffenburg*), element system *ReiseFrische, Wegeleit* and information system, and typological development of train station roofs.

a. The reconstruction and conversion of old stations (e.g., *Hamburger* Station as a museum)

b. The new station projects in the (new) city nucleus (e.g., under and on the site of the *Lehrter* Station—the new Berlin *Hauptbahnhof*)

Projekt 21 components were also conceptualized around the following points: Continual Aesthetic; Comprehensive Unity; Integration v/s. Isolation; Importance of Space Volume; Harmony of Material; and Room Atmosphere with Light. All of the construction measures were to be integrated into a single overarching conception – as an element of the landscape, a public space or as an intersection of all traffic systems, offering both a possibility to linger as well as to move. Beyond these purposes, it was necessary that the stations contribute to healthy urban development and surroundings, as a hub for long-distance and local traffic and as a centrer of cosmopolitan life.

Figure 4-26 The *Pilzkonzept* (Source: Kuhlmann 2006).

The intention of the *Pilzkonzept* was to connect suburban, trans-regional and national networks through defined points of intermodality, catering to dense urban interconnectivity and providing direct access to long-distance networks. In detail the proposal was the development of the north ring of the *S-Bahn* for international traffic (the cap of the 'mushroom' figure) and the development of the north-south track as a tunnel, (the stalk of the 'mushroom' figure), connecting the northern section of the inner ring to the suburban line from the mushroom cap.

4.3.1.2. The urban concepts and the '*Planwerk Innenstadt*' for Berlin

In an attempt to outline the urban context relevant to the *Stadtbahn* project, this section will first focus on the '*Planwerk Innenstadt*' proposal, which will provide details on the urban development of the city. Major political, economic, social, and cultural challenges accompanied the process of city reunification in Berlin. The city was a manifestation of fragments, discontinuities and historical and ideological breaks visible in the urban grid and in the building framework (Oswalt 2000:59). Constructed reminders of the built space from before the Second World War are present in the Berlin story. The bombs and the political divide left a vast amount of free inner-city land for government and investors, who had previously attempted to create competing realities in the divided urban space. The reunified city not only had to cope with redundant capitalist and communist planning policies, but also had to reconcile the matter of a civic realm with doubled functions such as industrial areas, cultural venues, political centers and (transportation) infrastructure systems. Thus, the merging of historical moments and past structures into the current urban space has become the key element in the debates surrounding Berlin's new building process. Discussions about the challenge of repositioning the city on the national and global scale formed a part of these reflections, particularly in the planning realm. Other influential factors of the past decade were the return of the federal government to Berlin, the successive withdrawal of governmental financial support from formerly subsidized industries and the trend of young people moving to Berlin. Issues of new urban development and identity formation were inherent to the debate on the rebuilding of the city through the urban planning concept of *Planwerk Innenstadt* in the 1990s and in the discussions among scholars.

The 'Critical Reconstruction': Collective memory, identity and urban development for Berlin

> *" Das Planwerk erfindet die Stadt nicht neu, sondern entdeckt verschüttete Lebensadern der Berliner Innenstadt wieder. Der in der europäischen Städtebautradition stehende, notwendige Stadtumbau, der sich an der Gliederung der Stadt in Straße, öffentlicher Park und Platz sowie Blockbebauung orientiert, respektiert dabei den Bestand und kommt ohne Abriss aus."*[73]
>
> *(The 'Plan' does not invent a new city, rather it rediscovers lost arteries of Berlin's inner-city. Rooted in the building tradition of the European city, necessary*

[73] www.stadtentwicklung.berlin.de/planen/planwerke/de/planwerk_innenstadt/einleitung/index.shtml (accessed August 12th 2009)

reconstruction orientates itself to the organization of city's streets, public parks and squares as well as its blocks, respecting the existing stock and avoiding demolition.)

The first concept developed by Berliner planners and the Berlin Senate was the '*Planwerk Innenstadt*' in 1999.[74] The Plan outlines an urban master plan for the formerly divided inner-city areas launched by the Berlin Ministry of Urban Development and Environmental Protection. In the planning concept, the *Berliner Innenstadt* (inner-city of Berlin) was to be redefined through the application of the concept of 'critical reconstruction'. The task behind the terminology was to create solutions for the inner-ciy with its two city centers (defined in the *Planwerk* proposal as City West and City East with the Historical Center of Berlin) by redeveloping Berlin as a single entity, creating a common historical and spatial configuration, and assisting the future development of the inner-city realm. The critical reconstruction strategy applied to the critical reconstruction dealt with the design, the morphological expression and the *Städtebauliches Leitbild* (urban planning model). The objective was to weave the different urban structures to the pattern of a uniform master plan aimed at achieving the layout of the *Compact City*[75] accompanied by the traditional Berlin city block structure

---

[74] Project group :Senatsverwaltung für Stadtentwicklung, Umweltschutz und Technologie:Staatssekretär Dr. Hans Stimmann, Julian Wékel, Christoph Müller-Stüler, Wolfgang Süchting, Patrick Weiss, Takis Sgouros,Hans-Georg Winthuis, Johanna Holtmann, Werner Bialluch, Werner Arndt, Ursula Renker; Planerstellung: Peter Jürgens,Holger Orb, William Rauch, Frank Studzinski, AG Arch.-Büro Albers u. Hoffmann-Axthelm: Prof. Bernd Albers, TobiasNöfer, Dr. Dieter Hoffmann-Axthelm, AG Arch.-Büro Ortner u. Dr. Neumeyer: Prof. Manfred Ortner, Markus Penell, Prof. Dr. Fritz Neumeyer Büro für Städtebau Machleidt & Partner:Hildebrand Machleidt, Stefanie Kirchner, GRI: Bodo Fuhrmann, Christiane Dumm, Participating Administration: Bezirksämter:Mitte, Kreuzberg, Schöneberg, Tiergarten, Charlottenburg, FriedrichshainSenatsverwaltungen: Bauen, Wohnen und Verkehr, Schule, Jugend und Sport, Finanzen Urban Studies and Evaluation:Martin & Schmidt:Volker Martin Arbeitsgemeinschaft Büro Kny & Weber - Flierl - Krause: Büro Liepe, Architekturbüro Meyer-Bach-Hebestreit-Sommer, Peter Meyer, Jan Bach, Wolfgang Hebestreit, Andreas Sommerer, Claudia König, Llanungsgruppe 4: Peter Dittmer, Frau Kissenkötter, Arbeitsgemeinschaft Planungsbüro Gruppe DASS Büro für urbane Projekte:Harald Bodenschatz, Martha Doehler, Iris Reuther; Landscape Evaluation: Landschafts-Büro Becker, Giseke, Mohren, Richard:Undine Giseke, Peter Wolf, Dr. Winfried Richard, Wojciech Jan Spyra, Büro ag.u: Eckhard Lange; City Marketing and Strategies: Büro Eichstädt:Dr. Wulf Eichstädt, Thomas Hake, Sergij Goryanoff Forschungsgruppe Stadt + Dorf: Prof. Dr. Rudolf Schäfer, Petra Lau, Elfriede Schmidt, Ralf Hollang, SenStadtUmTech:, Beate Tiltag; Transportation Planning and Enviormental Protection: IVU:Dr. Garben, Dr. Giehler SenStadtUmTech: Claudia Reich-Schilcher, Dr. Jürgen Müller, Olaf Gröndahl, Hermann Blümel, Dr. Wolfgang Reichenbächer, Analyses of Demografic Development: SenStadtUmTech:Heidrun Nagel, Dietrich Flicke, City Forum/CityProject: Philipp Meuser

[75] In the discourse on sustainable urban development and as anti-movement to the urban sprawl in the early 1990es in Europe the proposal arose of a Compact City (e.g. Ascher, 2004). The compact city concept aims high-density mixed-use and dense urban form. Urban activities are located within micro circulation radius to ensure better access to services and facilities based on its accessibility from the public transport network, walking, and cycling. The urban development is based on the local community or neighbourhood. The proposal of the Compact city is comparable to the proposal developed in the north-american discourse on sustainable urban development as the "New Urbanism".

and new buildings no higher than the 22 meters specified in the building code. The planning area included 30 square kilometres of Berlin's inner-city, encompassing City West and City East and including Berlin-Mitte, Friedrichshain, Kreuzberg, Tiergarten, Schöneberg and Charlottenburg.

The *Planwerk Innenstadt* proposal is, therefore, relevant to the *Stadtbahn*—the study area incorporates roughly 70% of the areas dealt with by *Planwerk Innenstadt*. The planning process was accompanied by numerous public workshops, where scholars as well as inhabitants could express their concerns and critiques, during the five-year period of its development. Academics in the architectural and urban planning realm (i.e. Koolhaas / Oswalt / Ungers) criticized the decision to emphasize a design strategy (*Städtebauliches Leitbild*) based on a shared, pre-1930s German past, when Berlin conformed to the European tradition of the 20th Century Metropolis. With this focus, the city's urban design and planning group employed an instrument of selective memory denying the urbanistic heritage of the former German Democratic Republic (GDR). They viewed the GDR's urban planning contribution as incongruous with the city's pre-war, modernist past and the post-modern urbanism of the future (Huyssen 1994:12-15).

Besides the methodological approach of public participation and the involvement of scholarly debate, *Planwerk Innenstadt* focused on relevant issues in the urban planning realm, such as:

a. the studies of demographic structures and changes;

b. the use and typology of urban space;

c. the development of the urban traffic network, where the *Stadtbahn*, the station and the system--as urban traffic tools--are part of the new concept for Berlin, and

d. the planning strategies of the sustainable realization of the planning proposal. With these targets, a priority of new inner-city housing developments was to follow a pattern of 'revived mixed-use'.

As the planning proposal outlines, this strategy is based on the example of spatial development of former urban structures, with priority given to the '*Gründerzeit*'[76] rather than the developments of the 1970s. The proposal called for combining labour, retail, transportation, entertainment and residential functions. Berlin's polycentric structure of urban centrers was the focal point of urban development. Therefore, it was an urgent task for municipalities to strengthen the individual centers. To avoid generic planning outcomes and a mono-functional approach to urban areas there was a distinct correlation to the specific urban conditions of each center. This considered, the challenge now faced was to apply a multi-functional approach within a traditional European town concept, characterized by a clear separation of public and private realms. Therefore, there was a distinct focus on envisioning public space not only for transportation functions, but also for enhancing the quality of public life, as transportation is an important component in the creation of place and the establishment of an identity, communication and the place of the collective memory.

To ensure the implementation of the planning proposal, economic feasibility studies were applied to the areas of *Leipziger Straße, Friedrichswerder, Fischerkiez, Quartier Stadthaus* and *Quartier Marienkirche* based on the planning proposal of 1996. These studies concluded that the implementation of the project could be financed through successive land sales. In addition, through the engaging of external development agencies, the administrative burden could also be significantly reduced. Ongoing developments of this planning concept are still prevalent in the inner-city These can be seen in the proposal's eight key areas: *Breitscheidtplatz* and *Lietzenburger Strasse*, the redevelopment of the City West (*Stadtbahn Station Zoologischer Garten), Kulturforum* and *Spittelmarkt, Molkenmarkt* (*Stadtbahn Station Jannowitzbrücke*), *Fischerinsel* in the *Mitte* district, *Karl-Marx-Allee* and *Luisenstadt*, which are in various stages of development.

Until now, the *Stadtbahn* has only been expressed within the *Planwerk Innenstadt* planning agenda in terms of its role as a transportation system. The viaduct was not taken into consideration. Shortly after the development of the *Planwerk Innenstadt* proposal, focused on the inner-city area of Berlin, the initiative 'The Renaissance of the Stations' was launched (see 4.3.1 for a more detailed outline of the transportation

[76] Time in Berlin of massive urban expansion1870 – 1910.

network planning). Continuing to focus on the inner-city area, this initiative concentrated on the redevelopment of Berlin's inner-city stations from both the transportation and urban planning perspective. The conversion of the railway was of considerable significance because it forms a dense network in Berlin's central urban areas. In this context an 'integrated' railway station development was introduced as a means to strengthen inner-city areas (e.g. Bodenschatz 2009[77]). Important criteria corresponding to *Planwerk Innenstadt* guidelines were the mixture of functions and the development of a compact city with areas of 'micro-circulation'. Besides the station itself, auxiliary and disused railway spaces in the inner-city area were also to be revitalized. This would allow the reactivation of former railway activity in inner-city areas and, as had already been discussed during the 'The Renaissance of the Stations´ discourse, urban barriers created by the railway would be reduced and the connections with the surrounding neighborhoods improved. The revitalization of the railway and its auxiliary areas would, according to the authors of 'The Renaissance of the Stations', create important urban areas and improve the city's quality of life and economy (Steguweit 1997:307).

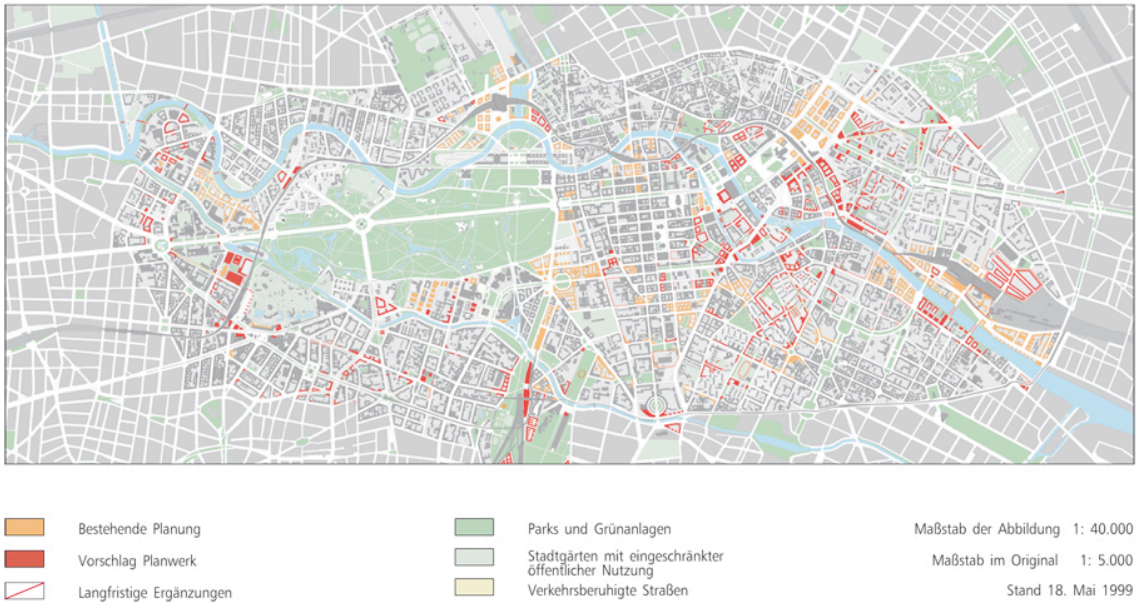


Figure 4-27 Objective Image Planwerk Innenstadt May 18th 1999 (Source: Senatsbauverwaltung für Stadtentwicklung Berlin 1999)

[77] Presentation of the scholar at the Technical University of Berlin, Workshop, " Railways, Real Estate & The re-making of cities in the 21st Century" Rail station area redevelopment mega-projects in Europe& beyond, October 16th and 17th 2009

4.3.1.3. Commercial dynamics related to the Stadtbahn: 'The Renaissance of the Station´

> *Heute befinden wir uns in einer neuen Phase der Eisenbahngeschichte. Umweltbewusstsein, finanzielle Zwänge und die wachsenden internationalen Mobilitätsbedürfnisse der Menschen haben zu einer Renaissance des Eisenbahnverkehrs geführt. […] In dieser Entwicklung spielen die Bahnhöfe als ein wichtiges Element des Erscheinungsbildes der Eisenbahn eine große Rolle. Bahnhofsmileu muss wieder durch Bahnhofskultur abgelöst werden". (Wissmann 1997:9)*
>
> *("Today we find ourselves in a new phase of railway history. Ecology, financial necessity and growing international mobility needs have led to a renaissance in the rail traffic. […] In this development, the stations play an important role in the presentation of the railway. The station milieu must once again be replaced by a station culture".)*

The target of `The Renaissance of the Stations' project, developed in the early 1990s by the state, planners and the *DB Bahn,* was to achieve a renaissance and upgrading of the train network. In the framework of the program, reference was made to the historical image of stations and their squares during their zenith in the 1920s. The railway station was an urban highlight, a first class address for a city's commercial and social space and as such, it formed the surrounding neighborhood, the *Bahnhofsquartier*. The consequence of the rise in individual traffic of the 1960s was the subsequent marginalization of the rail station, which lost its prestigious role as an important social and economic space.

> *"The prestigious rail station neighborhood was transformed into an unsavory milieu of drug dealing and prostitution. The environment of the station changd accordingly. The kiosks with bargains, hotdog stands and vending machines, and the shops with pricier articles lost out to even cheaper nick-knack offers." (von Gerkan 1997:41)*

A further reason for the railway station's neglect in Germany, and especially in Berlin, was its negative associations. It was a visual reminder of the fear and horror of two world wars - locality for fugitives, site of the deportation of the Jews, shelter for displaced persons. Along with this, the railway stations of the 1980s, according to Gerkan, represented a place of 'architectural profanity' (von Gerkan, 1997:44). Railway stations rebuilt after the war were prone to functionalism. With a rise in consumerism during the years of Germany's Economic Wonder, the railway station represented an old-fashioned and unattractive place. It became a place for senior citizens and other 'car-less' people.

The initiators of the 'The Renaissance of the Stations' program—the *Deutsche Bahn*, politicians and architects—were unanimous: railway stations had to become centers of city life once again; showcases for prestigious statues, symbols for visitors and

attractive facilities for rail customers. Besides extending the functionality of the stations selected for renovation, a new economical concept related to the train space was proposed: the former track spaces could offer a mixture of spaces for living, commerce and places of work. Adjoining areas were to be restructured and additional unused railway properties marketed for other functions (Dürr 1997:14).

One of the most important players was the *Deutsche Bahn*. Its new management structure (see 2.1.1) made profitability and economic viability the key issues. DB's intention to go public resulted in an interest in profit-oriented businesses as well as a reevaluation of the stations and railway owned land and properties. As far as the railway authorities intended to provide as much transportation coverage as possible for the benefit of the population, the *Deutsche Bahn AG* developed marketing strategies and positioned themselves in the transport market as 'the brand with high level of potential recognition' (Steguweit 1997:304-305) .

A profitability concept had already been developed during the first phase of the railway reform in 1994 (see 2.1.1). It was followed by a redistribution of *Bundesbahn* and *Reichsbahn* real estate whereby only assets deemed predominantly essential were given to the *Deutsche Bahn AG*.

During the second phase of the railway reform this real estate was again redistributed within the *DB AG Holding*. The *DB Netz AG*, which manages four fifths of railway property necessary for rail service (lines, tracks, signal systems etc.), as well as the *DB Station & Service AG* kept the full legal rights to their property.[78] The *DB Station & Service AG* is therefore the direct owner of all passenger stations in Germany, as well as most of the attached viaducts and station squares.[79] The remaining 1/5 of the railway property is managed by *DB Immobilengesellschaft*. The property that was deemed predominantly non-essential remained in the hands of the government.

The *Deutsche Bahn AG* always appeared convinced that it was viable to transform business to a 'dynamic' and 'market-oriented' transportation system (Steguweit 1997:308). In order to develop this strategy, the government operation became a transport and service oriented company. In addition to the railway reform there was

---

[78] See Wucherpfenning (2006:262), quote Bartkowiak (2004) / See also for detailed outline http://www.bev.bund.de/bahnreform.htm (accessed July 15th 2009)

[79] Personal Communication with DB Station & Service (2009)

also a restructuring of the company's structure. One of the most noticeable changes was the emphasis on service and customer orientation.

In 2001 *Vivico Real Estate GmbH* was founded. They began with a portfolio of over 200 properties with a total area of almost 8 million square meters. Until 2007, 94.99% of this real estate belonged to the '*Bundeseisenbahn*' (government railway administration) and 5.01% belonged to the Federal Republic of Germany.[80] *Vivico's* trademarks are railway properties and very large, centrally located areas of property that they intend to develop into new urban neighborhoods. *Vivico* works closely together with the *Deutsche Bahn* in order to market certain areas around outstanding new or newly renovated stations. On some occasions, a third member of the alliance is formed by the city, which, as in the case of Berlin, also owns or controls extensive, centrally located properties.

Redevelopment of stations with Projekte 21

The program and associated exhibition '*The Renaissance of the Stations'*, on the role of the railway in Germany was held in Berlin in 1997. It was realized in cooperation with the *Deutsche Bahn*, and was also under the aegis of both the ministry of construction and traffic, along with the Association of German Architects and the DAZ (*Deutsches Architektur Zentrum*), and the architects of Berlin's new central station Gerkan, Marg and Partners. The primary motive of the exhibition was to promote the increased reconstruction of railway areas and stations required for sustainable transportation concepts of integrated transportation systems including individual traffic. Berlin's particular transportation planning situation allied with the newly awakened interest in railways in Germany meant that the railway system was a particularly high priority.

The program accompanying the proposal—the *Projekte 21* was a cooperation with public-private partnerships between the rail systems management and municipalities. The reconstruction efforts were especially focused on the reconstructions of the stations and the viaduct was not even mentioned. Therefore, architectural efforts were also to be linked, as has been the case in many places (see 2.3, the new station offers additional uses), to the composition of the new service function (e.g., travel centers, service points, and orientation systems).

---

[80] In 2007, Vivico was sold to the Austrian CA Immo., sed Peters, Alfaro d'Alençon (forthcoming)

The new railway station was defined as an environment of closed experience, which adequately meets every customer need (Steguweit 1997:308). Through its constructive dialog and dimension, the architecture should develop the 'rediscoverable' value of the railway station. A recognition value was to be achieved through corporate design and through the station itself, whose materials and surfaces support both the identity of the space and the customer's identification with it. The aim was to develop a language of form that both structures the space and advances the dialog with the space. Daylight should dominate the impression of space (von Gerkan 1997:57). The rail service must cater to a changing customer profile, which today includes 'employees of small companies and business travellers' and, in general, a larger diversity of customer interests (Steguweit 1997:307). The architectural efforts were also to be linked to the composition of the new service function (travel centers, service points, orientation systems, etc.). An aesthetic should be conceived to provide singular and exclusive service offers, which 'creates' a new quality of space (von Gerkan 1997:57).

4.3.2 The emerging urban transportation space

Having presented the *Stadtbahn*'s space planning, and its associated commercial dynamics, this section concentrates on the complex dialogs of varying actors and interest in the development of the *Stadtbahn* project. It is, therefore, interesting to research how the public voices of the city relate to the development of the *Stadtbahn* project, the topics and conflicts. Along with newspaper articles, scholarly magazines and DB outlines referring to the *Stadtbahn* from 1998-2008, this section studies the process of the *Stadtbahn*'s project development. The newspaper analysis includes research on popular Berlin-based magazines. Eighteens articles from e.g., *Berliner Zeitung*, *Die Welt* and *Berliner Morgenpost* are explored as well as additional twenty articles, consisting of publications of the DB (Deutsche Bahn) and articles by scholars.[81]

4.3.2.1. Complex dialogs of varying urban interests: The restructuring of the transportation network

The representation of the stations and the viaduct were generally the same in the evaluated press information, while scholars and the DB gave gradual preference to the development of network and the stations.However, the newspapers defined their own

[81] See for detailed sources of single articles authers the Annex

topics of interest, and it is interesting to give an account of the specific nature of these articles related to the *Stadtbahn*. The articles refer mostly to the construction of the main stations and the development of the viaduct in the most frequented spaces of *Alexanderplatz, Hackescker Markt* and *Savignyplatz*. However, the year 2006 was the opening of the *Hauptbahnhof* and is, therefore, crucial for the understanding of the image that the *Stadtbahn* and the new construction had in the public realm. Paradoxically, as will be explained in the next section, although the media was providing intensive coverage of the new station development, urban dwellers did not incorporate the station into their daily perception.

The survey on the media information shows a significant increase in references to the *Stadtbahn* in 1999 when several construction projects began. The number of articles increased by 15% the following year with most covering the commerce-related elements of the new stations, building details and the diverse functions of the *Stadtbahn,* such as the viaduct arches and their diverse uses. The most common theme of the articles was a description of the way the stations were utilized in the new system and the workings of the system in general. The second focus of the published information, regarding the functionality and construction of the system, was the construction of the *Hauptbahnhof*. However, the articles did not only focus on the *Hauptbahnhof*. They also covered other construction projects like *Friedrichstrasse* and *Alexanderplatz*. The press also focused on the problems encountered by areas adjacent to the construction sites where new streets had to be planned and traffic had to be diverted. The reconstruction of the main interconnecting stations *Friedrichstrasse* and *Alexanderplatz* along with the new construction of *Hauptbahnhof* collectively represented a large construction area in the dense inner-city of Berlin. This reconstruction affected both the urban surroundings and the lives of city dwellers as passengers were forced to rethink their daily journeys according to the changing transportation system. The media made mention of this as well.

> *„Der Alexanderplatz – für Füssgänger gleicht er wegen der zahlreichen Baustellen in diesem Tagen einem Labyrinth. Beinahe täglich müssen Berliner und ihre Gäste zu den S- und U-Bahn- Eingängen immer neue Wege gehe“ (Pletl, in:Berliner Morgenpost 2006)*

> *(„For pedestrians, Alexanderplatz these days has become something of a labyrinth due to the numerous construction sites. Nearly everyday, Berliners and the city's guests must find new ways to the S- and U-Bahn entrances.")*

During the construction phase of the station between 2004 and 2006, articles started emerginf that criticized the station's size and the new streamlined *Pilzkonzept*. These

changes were sure to have massive impacts on Berlin transportation with its new functionality.

The downgrading of former 'small main stations' for East and West Berlin

Criticism from the media was particularly intense between 2006 and 2008 when it was announced that *Bahnhof Zoo* and *Ostbahnhof*, formerly the main stations for West Berlin and East Berlin respectively, were to be downgraded to regional train stations. In summer 2005, the *Deutsche Bahn AG* surprisingly announced that instead of allocating transportation flow equally netween the two rail lines of the *Pilzkonzept* (east-west and north-south), the vast majority of long-distance trains would run through Berlin on the north-south line. The newspapers reported that the new station should be developed as a central station and therefore international trains should stop there and preference was given to concentrate the traffic at this point. However, the DB stated that the reason for the downgrading *Bahnhof Zoo* was that the station was considered to be too small: it only had three platforms and a total of 150.000 passengers frequenting the station per day.[82] Politicians, citizens and business lobbists used the media to complain about these changes with the fear that the City-West would lose its central function, and a general impoverishment would result in terms of commercial activity and transportation provision.

In particular, *Bahnhof Zoo* was at the center of the discussion. After reunification *Bahnhof Zoo* became Berlin's most frequented station due to its proximity to City-West around *Kurfürstendamm* and its good connections to the subway and bus services for West- Berlin. A fear was that the local economical performance would decline due to reduced connectivity in the area. Along with this, people also worried that journeys would lengthen considerably, especially for the inhabitants of the western part of Berlin and for those passengers arriving from parts of western Germany to Berlin. The critics remained steadfast in their argument that the rerouting of the system and the preference for the hub were to ensure the traffic flow to the newly created retail space at *Hauptbahnhof*.

[82] Personal Communication with DB Station& Service (2009) and presentation by Ahlfeld at the Technical University of Berlin, Workshop, " Railways, Real Estate & The re- making of cities in the 21st Century" Rail station area redevelopment mega-projects in Europe& beyond, October 16th and 17th 2009

The central station in the sparsely populated area

The area surrounding the new central station was also a topic for the media during the building of the *Hauptbahnhof*. The articles criticized the main station as a new central hub without a direct connection to the subway and tram network. The uncertainty surrounding the official first date of operation was also an issue. Critics took umbrage at the fact that the new station would be built in a sparsely populated area with few businesses or residences, asking rhetorically who would actually use the station. The media claimed that the lack of passengers would frustrate the expectations of the *Hauptbahnhof* as Berlin's new central train station. However, it was hoped that perhaps the striking architecture would attract visitors. Nevertheless, the number of rented retail spaces in the *Hauptbahnhof* building does at least show faith in the station from a commercial point of view.

Lehrter Bahnhof becomes a department store, and retail in the arches

Most articles refer to the mix between the shopping areas and the traffic space, recounting that the reconstruction of the former *Lehrter* Station as *Hauptbahnhof* would primarily serve the function of providing retail and office space. The commercial aspects of the *Stadtbahn* in the media were primarily dominated by the development of the additional uses in the *Hauptbahnhof.* Under scholars articles the *Hauptbahnhof* was defined as: '*Shopping Mall mit Gleisanschluß*' (shopping mall with tracks)[83]

Already in 2002 (before the *Hauptbahnhof* opened) the media had made an issue of the partial vacancy of the viaduct arches in traditional areas like *Savignyplatz* and the renewed arch spaces around the *Monbijou Park* in *Mitte* near to *Hackescher Markt*. However, the public focused on the emerging new functions in the viaducts and their extensive use as cafes, restaurants and nightclubs. In 2007, stories made mention of the many arches in *Mitte*, the backdrops and addresses for numerous festivals and a vibrant new club culture. This information was accompanied by additional articles in the press referring to the rich festival culture, which was taking place in Berlin's public space around the viaduct arches.

---

[83] see http://www.tagesspiegel.de/berlin/shoppen-mit-gleisanschluss/1583476.html (accessed June 7th 2009)

New public name for the arches

Another media focus at the time was on the new functions of the viaduct arches and their spatial situation in the Berlin context. One of these developments was the successive opening of the viaduct spaces. In stories covering urban development projects in Berlin-West, articles detailed the transformation of the viaduct for retail uses and the development of the viaduct for better accessibility to and through the arches. Along with this change (largely upgrading), the transformation of the formerly little used arches close to *Fasanenstrasse*, now the *Fasanen* Arches, into retail space as part of the new development of *Kantstrasse* at *Zoologischer Garten*--the *Neues Kranzler-Eck* by Architect Helmut Jahn, was also of media interest.

The ceremony without the architects of the project

One of the most widely covered ceremonies in 2006 was the opening of the *Hauptbahnhof* on May 26th, 2006. Opened by Chancellor Merkel and Transportation Minister Tiefensee, both arriving via the *InterCityExpress* from Leipzig, the public ceremony was covered in great detail in numerous newspapers.

The inauguration took place in the summer of the football world championship in 2006 in Berlin. The city was therefore crowded with tourists who had travelled to watch the football matches. Fireworks, German rock bands and 30,000 visitors supported the ceremony, which attracted extensive coverage of the *Stadtbahn* in the media. However, this ceremony also opened the door for intensified criticism and frictions surrounding the transformation of the former *Lehrter Bahnhof* site to today's *Hauptbahnhof*, one of them being the controversial naming of the station. In the summer of 2002, when construction of the new station was already under way, the Transport Ministry and the *Deutsche Bahn* conducted a general survey due to protest among city dwellers about the changing of the station's name from *Lehrter Bahnhof* to *Hauptbahnhof*. The press began to follow the sequence of changes to the name, first publishing the results of the survey (80% voted not to change the name) and then covering the successive changes of the name. Thus, with the initial agreement to keep the name *Lehrter Bahnhof*, the press was informed in February of 2005 that the station would be named *Berlin Hauptbahnhof - Lehrter Bahnhof*, only to be renamed *Hauptbahnhof* after the new station was inaugurated.

The other controversy surrounding the building of the *Hauptbahnhof* was the absence of the station's architect Meinhard von Gerkan from the opening ceremony. Due to disagreements between the Deutsche Bahn AG and the architects over roof proportions and the lighting concept, von Gerkan did not attend the celebration. Instead, he submitted an article to the press on May 25th 2006, one day before the opening of the station, stating his frustration and discordance with the project and the significant defacing of the building, which infringed the authorship rights on the project. The *Deutsche Bahn* defended its actions stating that the changes presented a monetary saving of 12 million Euros. Still, the friction did not become public until the end of the legal dispute later that year, in November of 2006. The presiding judge sided with the architects citing the considerable disfiguration of the building and ruled in favor of the subsequent installation of the originally planned ceiling.

4.3.2.2. The empirical survey on the emerging *Stadtbahn* space between 2005 and 2009

This section provides insights into the current state of the *Stadtbahn* urban transportation space. Therefore, the survey is organized to reveal:

a. Firstly, the transportation development, such as the network functionality of the transportation system in terms of transportation provision

b. Secondly, the urban context of the *Stadtbahn* space according to:

   - the physical development

   - activities and perception of city dwellers regarding the transportation space

   - as well as the relationship between actors

c. Thirdly, the commercial activities and dynamics associated with the transportation space.

Therefore, the survey examines the transportation space of the Stadtbahn, which consists of the viaduct line, the fourteen stations and their squares between the main points of connection to the *Ringbahn* (*Ostkreuz* and Westkreuz). The viaduct structure begins between the stations *Charlottenburg* and *Savignyplatz*. The last arch forms the bridge over *Uhlandstrasse* (two streets to the west of *Savignyplatz* station). It also

forms the bridge crossing *Holzmarktstrasse* between the stations *Jannowitzbrücke* and *Ostbahnhof*.

The transportation performance of the Stadtbahn

From 2005 to 2009, the timeframe in which the field research for this case study was conducted, the *Stadtbahn* network underwent significant restructuring. This was due to the federal government's 1996 decision to return central functions to the original capital city following reunification.[84] The new network outline has been functioning since 2006 and has completely reshaped the pattern of intra-city access and inter-city rail connections.

With its four-track layout, the *Stadtbahn* network still represents an all-inclusive train network outline. Furthermore, the single-entity scheme of the system includes the management of trains for local uses along with inter-city trains such as the ICE. The *Stadtbahn* provides a suburban traffic connection to the *Ringbahn* at *Westkreuz* and *Ostkreuz* via four *S-Bahn* lines.[85] In addition, the four lines of the *Stadtbahn*, diverge at *Westkreuz* and *Ostkreuz*, providing an *S-Bahn* connection to the outskirts of Berlin, or, as in the case of the fourth line, a connection to neighboring cities like Potsdam and towns in Brandenburg.

The current development of the *Stadtbahn* network shows that the suburban train system's connections and transportation performance were improved by the introduction of the 'hub'. The primary 'hub' added to the *Stadtbahn* network was the *Hauptbahnhof*, the new central station. Here, the railway network structure, which had been disrupted during the period before reunification, was redesigned with a network concentration—a focus of planned intermodality and intra- as well as interconnectivity. The hub serves for the bundling and even sharing of the *Stadtbahn* lines for suburban, regional, national and even international traffic. In so doing, trains like the ICE cross the city on the Stadtbahn lines and consequently come into direct contact with the urban field. Such trains are accessed at distinct points, such as the new *Hauptbahnhof*.

---

[84] See for detailed information on the routings and dwellers the mobilty diary in the Annexe. Alfaro (2009), Mobility means prosperity research seminar.

[85] *S5- Strausberg-Oylmpiastadion, S7-Ahrensfelde-Olympiastadion, Spandau – Airport Schönefeld, Regional S-Bahn* line *RE 1- RE7* Potsdam Central Station to *Ostbahnhof*, *Frankfurt (Oder)* and *Eisenhüttenstadt*)

System functionality and the the viaduct as station entrance

Despite the changes in transportation system's structure, the viaduct line has remained unaltered. Its physical outline is a permanent figure, installed according to strict Prussian guidelines requiring standard heights of 14 feet (4.40 m) headroom with four tracks. The viaduct structure provides several access options to the station, and the permanent viaduct line is overlaid vertically with the more flexible station architecture, the glass body of the second level. This use of the viaduct arches as the station entrance can be seen at the Verkehrsstationen (smaller stations) *Savignyplatz, Tiergarten, Bellevue, Hackescher Markt* and the *Bahnhöfe* (stations usually for interconnection) *Alexanderplatz* and *Friedrichstrasse*. A second aspect of the viaduct was the common strategy to allocate the station entrance to the adjacent to the street grid. In the stations *Zoologischer Garten* and *Friedrichstrasse*, during the first modernization of *Zoologischer Garten* in the late 1960s and that of *Friedrichstrasse* in the 1990s, the original viaduct shape was replaced by a larger structure. The new viaduct structure provided an entrance area, while secondary entrance areas were placed on the street. Around the station area of the *Hauptbahnhof* the viaduct space was removed, and the entrances to the stations are provided within the body of the station.

Stations with distinguished network role and the central 'hub'

Several stations are undergoing massive restructuring to include new junctions and to meet the demands for better-planned stations. Through the network-wide attempt to achieve a better interconnectivity and intermodality, the station has developed its own unique role. With the completion of the central station, *Hauptbahnhof*, the previous small 'west' central station *Zoologischer Garten* was downgraded to a regional railway station, and the number of national and international rail services at Berlin *Ostbahnhof*, the former 'east' central station, were likewise reduced. Meanwhile *Friedrichstrasse*, the former border station between East and West Berlin, was planned to function again as the crossing point of the north-south and west-east urban intra-connection.

This 'pre-determined' role alters not only the functional display of the station, but it also changes the size and the entrance area of the given station, as will be shown in the case-study survey. Interconnecting stations (e.g., *Zoologischer Garten, Friedrichstrasse* and *Alexanderplatz*), designed to handle a dense and constant flow of passengers from the outside, can be distinguished from those stations located in less

dense surroundings (e.g., *Jannowitzbrücke, Charlottenburg* or *Westkreuz*). The amount of passengers entering the public transport system at these points necessitates an extended entrance space as well as additional entrances (the studied stations exhibit more than six entrances). Thereby, distinctions arise in the following types of network development and functional and morphological display, such as the hub—the *Hauptbahnhof* in the case of the *Stadtbahn* (for detailed outline see the matrix of the station)

- This **first station typology** provides the concentration of the network to one specific, central point or 'hub' (also geographically central in the city) of high activity, not only as a suburban cross connection between the north-south and east-west railway network, but also as a connection to the subway system (U55, recently opened in July 2009). It also offers an anticipated connection between regional, national and international networks as well as *Park & Ride* possibilities. Connection to the tram system has not been realized so far. Given its hub function, on a scale of 1 to 10 the size of the station was evaluated as a 10, as one of the biggest stations of the network.

- The **second station typology** encompasses the interconnecting station (between *Stadtbahn* rail service, the regional level and the subway). This mode of connection was designed for stations like *Charlottenburg, Zoologischer Garten, Friedrichstrasse, Alexanderplatz* and *Ostbahnhof*. An exception is *Jannowitzbrücke*, built as a sub-group, providing only connectivity between the subway line and *Stadtbahn* rail service. Characteristics of these stations are the extended zones of interconnectivity between suburban train structures and regional trains along with both horizontal and vertical connections to subway zones. The attempt at connectivity has resulted in a general extension of the stations from one platform to multiple access platforms. The size of the stations designed for interconnectivity has been evaluated within a medium range of 5-9. *Charlottenburg* station, where construction work is being undertaken to improve connectivity, still illustrates the divided figure between former West-subway and East-*S-Bahn*. The zone of interconnectivity extends to the outside of the station, through pathways to the subway stations in close proximity. *P & R* opportunities at these stations are not officially advertised, though the parking zones in front of *Charlottenburg, Zoologischer Garten*

and *Ostbahnhof* stations do provide these interchange options from individual car to the public transportation service.

- The **third station typology** provides interconnecting rail service for the exchange to the *Ringbahn* (e.g., *Westkreuz* and *Ostkreuz*). Through a cross layout on two levels (two railway platforms), these stations provide the connection between the interurban transportation services to the *Ringbahn*. While *Westkreuz* and *Ostkreuz* connect to the ring structure, they do not connect to the subway network of Berlin. Their function is to provide interchange among the overground trains. The size of the station on a scale of 1-10 (*Hauptbahnhof*=10) is evaluated to a small dimension of 2 (superior only to the *Verkehrsstation*). Passengers usually remain within the station, which does not provide an access point into the network system. Thus, as is especially particularly the case with *Westkreuz*, there is only one entrance to the station. This general figure of interconnecting rail service is different at *Ostkreuz*. The station was equipped with four entrances in a cross layout and a larger entrance hall was provided. The close proximity of the surrounding housing areas at *Ostkreuz* justifies its unique role over that of the *Westkreuz* station, which stands in an urban void with lower density urban surroundings and thus less passenger traffic to enter into the network. In terms of system functionality, the *Verkehrsstation* is less equipped, usually having only two lines on one level and only two entrances to the station. Such station figures remain prevalent at *Savignyplatz, Bellevue* and *Tiergarten*. Thus, the size of these stations range from 1-2.

The realized transportation development was designed to meet the low level of individual car use in Berlin. Motorization has stagnated on average since 1994 and has even begun to fall slightly from 329 to 317 cars per 1000 inhabitants.[86] That is still a modest figure compared with other greater metropolitan areas in Germany: Hamburg and Munich have 475 and 577 vehicles per thousand inhabitants respectively. Although the motorization level in Berlin is low, 36% of all trips are still undertaken in cars, compared to 31% on public transportation and 10% by bicycle.[87]

---

[86] see http://www.stadtentwicklung.berlin.de/verkehr/verkehr_in_zahlen/en/ (accessed July 15th 2009)

[87] The ratio between local public transportation and private transportation

In addition, the characteristics of Berlin's demographic development considered in the mobility provision are critical for justifying the massive restructuring process and costs. In detail, this means, firstly, that Berlin has shown stable demographic figures in terms of population growth. However, the development concept was planned at a time of euphoria after the reunification of Berlin when an expected 30% population increase to six million inhabitants was forecast. This population growth never occurred. In fact, the numbers have remained stable since 2000, after a minor decrease in the 1990s due to the migration of Berliners into Brandenburg. Secondly, the number of expected commuters between Brandenburg and Berlin, a significant demographic for the provision of daily mobility remains low even in comparison with other German cities[88]. Therefore, the hub design endured significant operational criticism because of its overestimated dimensions and its failure to adapt to the existing transportation needs of the population.

The second dimension of criticism refers to the level of real connectivity that the central hub provides in terms of intra- as well as interconnectivity to the urban surroundings. The central station was located centrally in geographic terms, however its site is on derelict land where the Berlin Wall once stood and is, after three years of network operation, still a largely undeveloped area. Planned junctions with the 'hub', such as the northern connection to the *Ringbahn*, the planned connection to the tram system and the subway line, are still in the development stage. (For a detailed outline see Survey 2, Chapter 5).

The urban context of the Stadtbahn: Morphological characteristics of the Stadtbahn transportation space

This section will provide an overview of the morphological state of the *Stadtbahn* space. The *Stadtbahn* is positioned in Berlin's urban space as follows: the line with its viaduct runs along the eastern foothills through large open areas and across railway wastelands. The viaduct breaks through blocks of the former dense, low-rise '*Gründerzeit*' building structure in *Mitte, Tiergarten* and *Charlottenburg* and passes individual buildings from the 1950s to 1970s in between. Cutting through the *Tiergarten* park, the *Stadtbahn* line is flanked by neighborhoods with streets running parallel to the tracks. Occasionally, it crosses the River Spree, more frequently streets, on its bridges.

[88] see http://www.stadtentwicklung.berlin.de/verkehr/verkehr_in_zahlen/en/ (accessed July 15th 2009)

However, during its time of installation the morphological changes were less pronounced.

In accordance with plans for the *Hauptbahnhof*, the line was moved north. This was necessary because of the huge increase in size of the station. This move was accompanied by the removal of several viaduct arches. The *Hauptbahnhof* was equipped with a column structure, which replacing the viaduct's brick arches. The sequence of morphologically diverse areas, on the macro-scale, creates a heterogeneous space and a sequential reading of the transportation space along its path. The viaduct shape remains a flexible element along with its functions and the design of its facade. Seen from the macro-perspective, the viaduct combines the two centers of Berlin and is part of the urban concentration of the city.

However, a macro-level criticism expressed by de Certeau is that though this elevated position shines light on the plan of the city, there is a loss, on the other hand, of the notion of everyday life that characterizes the particularities of the urban space (de Certeau 1984 :91). Therefore, to investigate these characteristics we need to abandon the macro view and step into the micro-realm. We must move down to the street, the buildings and the squares, which is the area where the dwellers physically move. The micro-view allows for more differentiated statements to be made, like the passing through the block structure in *Mitte* and *Charlottenburg*. The transportation line infiltrates the private rooms and weaves together the private-inner and public-outer area. In the *Tiergarten* at *Hansaviertel* buildings and gardens are oriented away from the transportation space generating a unique urban space hostile to the transportation space. This area is characterized by once private yards, now intruded upon by the transportation space.

In streets like *Dirksenstrasse* and *Georgenstrasse* in *Mitte* the viaduct is very visibly present and uniutes the street front. Its arches house the functions that create its surroundings. In open areas, as seen in parts of *Mitte* at *Luisenstrasse*, *Moabiter Werder* and *Jannowitzbrücke,* the line and the arches become independent elements. Built in close proximity to the River Spree, on a former industrial space, small, detached buildings housing retail and manufacturing activities on *Holzmarktstrasse* are oriented towards the arches, creating a space distinct to that of the distant block structure in *Mitte*. A dialog between the adjacent areas is recognizable in terms of buildings taking on the shape of the viaduct to express their own forms. While the old block structure typically shows its inner side to the viaduct and presents an

accompanying façade to the street, new buildings employ urban design or architecture to elaborate on the shape of the viaduct by adopting its characteristic curved shape into new building forms (*Hansaviertel, Moabiter Werder* and *Kantdreieck*). The permanently elevated highline of the train system with its viaduct arches below divides the city into horizontal areas. This horizontal outline remains part of the *Wilhelminian* block with its public ground floor and overlying private floors.

Figure 4-28 (following pages) foldout image, table viaduct: Survey on transportation, urban and commercial development of Viaduct and arches 2007 - 2009 (Sources: Alfaro d´Alençon 2009)

Figure 4-29 (following pages) foldout image, Table stations Survey on transportation, urban and commercial development of the Stadtbahn train stations 2007 - 2009 (Sources: Alfaro d´Alençon 2009)

Figure 4-28 (See additional pdf file) foldout image, table viaduct:
Survey on transportation, urban and commercial development of Viaduct and arches 2007 - 2009
(Sources: Alfaro d´Alençon 2009)

Figure 4-29 (See additional pdf file) foldout image, Table stations
Survey on transportation, urban and commercial development of the Stadtbahn train stations 2007 - 2009
(Sources: Alfaro d´Alençon 2009)

Plan overview (See additional pdf file)
Viaduct uses 2007 - 2009
(Sources: Alfaro d´Alençon 2009)

The lived space-routes of urban dwellers and the Stadtbahn

Based on the literature review concerning specific patterns of mobility in the contemporary urban space, mainly supported by Ascher (see Chapter 2.4.3, Ascher 2004:25-35), a predominantly 'mobile life' can be observed among dwellers of the great metropolises in Europe. This means different spheres of daily life and social relations, such as work, family, personal activities, entertainment, supply chains and friends, are spread over the urban space, thereby creating the need for mobility. However, Ascher's research refers to the case of France with a particular focus on the capital city. Paris and Berlin, however, display distinct differences in their basic organization, the former being based on a centralized pattern and the latter showing a polycentric structure.

With this changed context, the concern of this survey was to hone in on the specific case of Berlin and on just how mobile urban dwellers in Berlin are. It was important to examine what their specific daily sequences of movement are, how they move (which means of transportation) and why and how these activities are related to the Stadtbahn. The following case-studies were designed to focus on the specific characteristic of movements, and to understand how dwellers move, based on different age demographics, social backgrounds and lifestyles.

Therefore, volunteers from two different buildings were chosen, each displaying comparable demographic spreads. One was located in *Wilmersdorf* (a middle-class, mainly residential area with relatively few entertainment areas) in the western part of the city and the other in *Kreuzberg*, in a central eastern area of Berlin (a high-mix, young district with a high immigrant population and mixed-used urban areas).[89] The inhabitants ranged in age from 14 to 50 and had a wide range of occupations (e.g., scholars, students, professionals and homemakers). Both locations are inside the *Berlin S-Bahn ring* in the dense urban area of the inner-city of Berlin and have comparable connections to the public transportation network. Public transportation connections—mainly to the subway network—could be reached by foot within 5 minutes from both buildings, while the *S-Bahn* network could be reached within 15 minutes. Participants were asked to use the mobility diary to keep a daily record of their routines and the ways in which mobility networks were utilized. The adopted

[89] see Alfaro d'Alençon (2010), in: Hofmann/ Pol inna,/ Richter /Johanna Schlaack Se n a t s v e rwa l t u n g f ü r St adt e n twi c k l u n g Be r l in: Beyond Planwerk Innenstadt (Paper to the Conference) forth comming

understanding of the reasons of movement for this research presented by Ascher, is that movement is mainly based on purposes of work, shopping and education, and secondarily, on leisure and entertainment (Ascher 2004:25-35). Based on the researched cases, the broad distances often covered to reach places of work, typically alters the average range of personal mobility. The results of the research are:

- **'Micro-circulation' areas increase in mixed areas**. This is well documented in the debate on the purpose of high-mix urban areas, with reference to the micro-circulation zone of intermediate proximity (walking distances of 5 to 20 minutes)—in their daily routines dwellers often walk short distances for shopping and entertainment. This theory is supported by the mobility diary findings in the study of a ´micro-circulation´ area for the building located in *Kreuzberg*, a district with high-mixed functional areas in its neighborhoods. In contrast, the circulation of dwellers in the *Wilmersdorf* building, a district of mainly residential buildings with centered multi-functional areas, shows more frequent circulation between the settlement and the public transportation system, for further access to other spots in Berlin.

- **Public transportation as preferred mode of transportation.** However, the survey also contributed to the understanding that among the studied urban dwellers, preference is given to public transportation and the main circulation radius for diverse activities generally remains within Berlin's inner-ring. The most frequent routes taken by dwellers were to neighboring districts, within a radius of 30-minute travel. A tendency that emerged from the study was a pattern of correlation between chosen means of transportation and a typical activity. For example, with work activities requiring the longest trips, both public transportation and individual car use were prevalent. However, in the case of buying supplies, car use tended to be preferred. Furthermore, in the case of intermediate circuit mobility for leisure purposes, trips were often conducted via bicycle. In the minor cases, where the study displayed an even spread of preferred modes, like bike or public transportation, most often the trip was carried out with only one mode of transportation, in contrast to intermodality.

- **The *Stadtbahn* serves as an occasional rather than daily mode of transport.** While both inhabitant groups used the *S-Bahn* and *U-Bahn* in the

same way, in terms of daily mobility, the *Stadtbahn* line was ranked below the subway system. The transportation system is used by the observed dwellers to cross the center of the city to defined areas of shopping or leisure. However, both locations were closer to the subway lines than to the *Stadtbahn* lines, *Hohenzollernplatz* subway station in *Wilmersdorf* and *Schlesisches Tor* subway station in Kreuzberg.

- **High-Commuting index represents a gender-specific movement.** Gender-specific movements could also be established. In the consulted literature, high-degrees of mobility for business purposes was responsible for developing new tendencies within the mobile society. However, women with domestic and professional occupations comprised the group with the highest rate of mobility. Thus, movement increased with the amount of personal activities such as working, childcare and transporting of children to activities along with supply and personal shopping (see graph). The observation of daily routines provides the insight that dwellers, indeed, have particular methods of mobility. Often, they organize their movements based on efficiency, supporting the notion that mobility has an economic value. Thus following the logic of working, shopping around the place of work (in the broader way as house-working-house principle). Others have circular routes in their daily routines (see graph figures). In this context, some defined shopping routes could be observed, such as central shopping areas and the *Hauptbahnhof*.

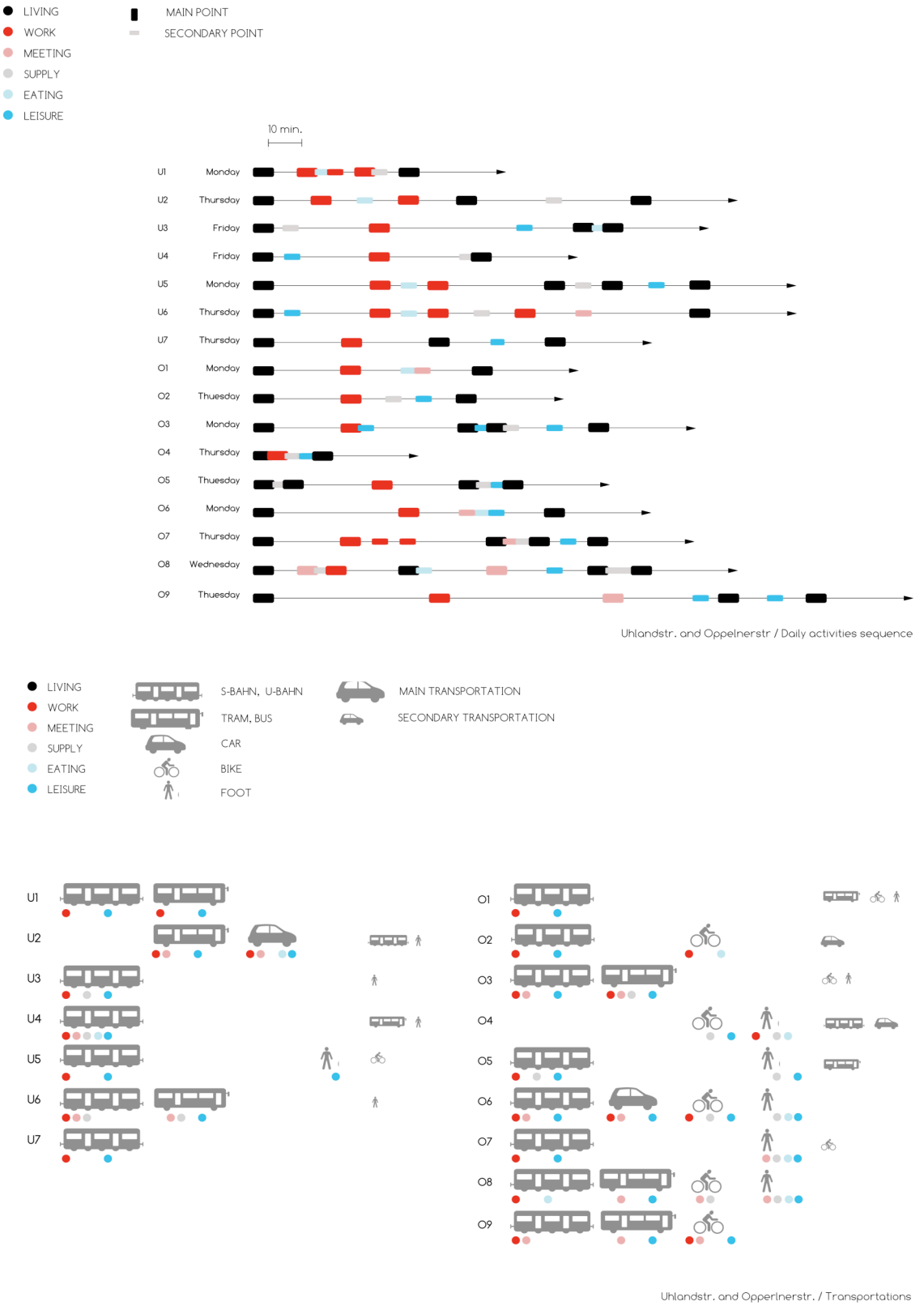


Figure 4-30 The daily movement defined by the mobility diary for different urban dwellers in Berlin (Source: Alfaro d´Alençon 2009).

The daily movement defined by different dwellers shows the different reasons for the movement. From the summary, gender specific high mobility could be defined for domestic reasons. Daily mobility under the research of mixed modal uses shows that in a few cases mixed modal uses are undertaken while mobility with public transportation and individual car use prevails.

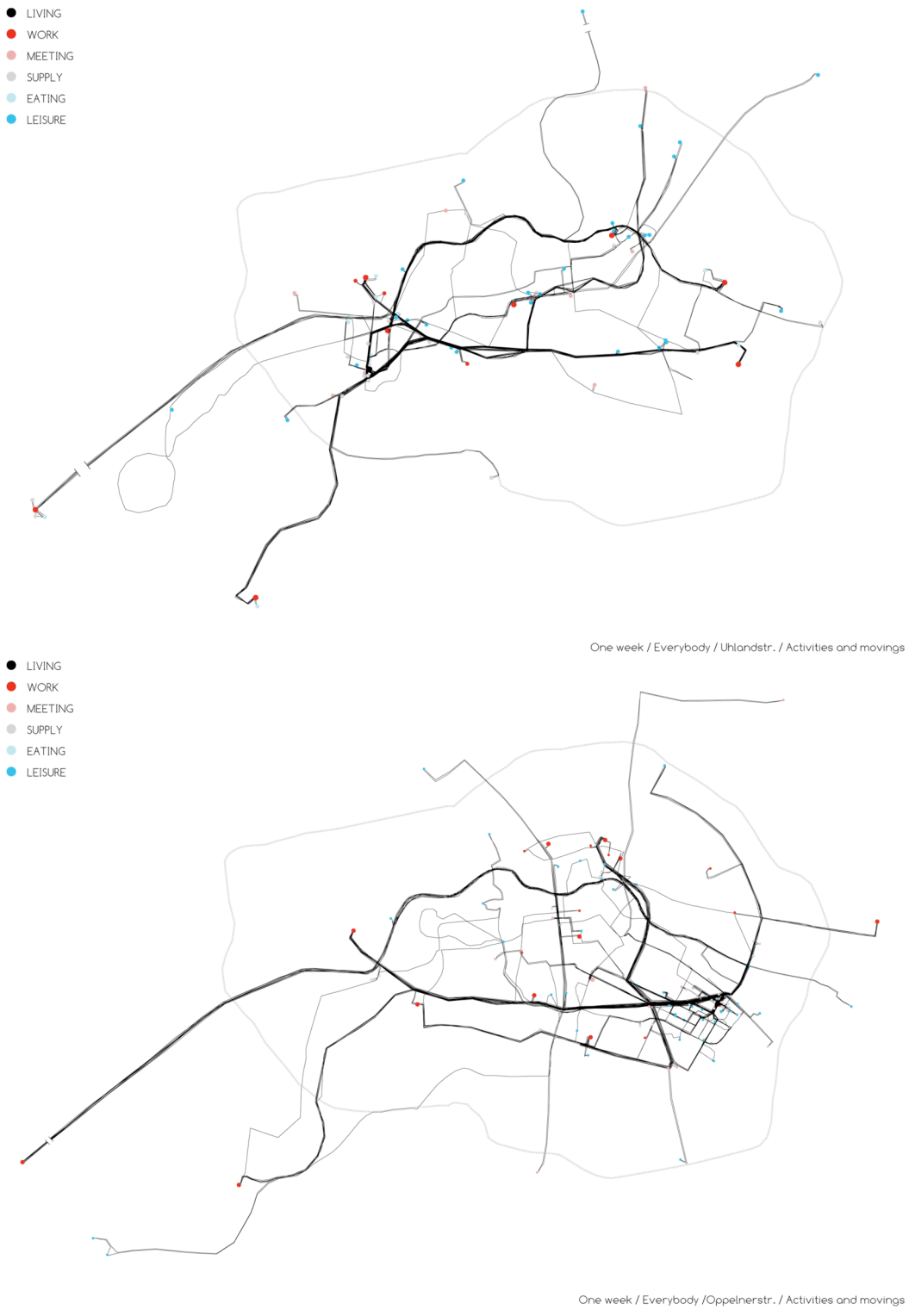


Figure 4-31 The main areas of daily movement for the two survey localitions in Berlin (Source: Alfaro d´Alençon 2009).

The image shows the total movement by the dwellers of both buildings, with Wilmersdorf above and the example in Kreuzberg below. The main movement remains within the Ringbahn area. While the ´micro circulation' is more prevalent in the Kreuzberg building, the dwellers in the Wilmersdorf case undertake more journeys around the center area of Berlin

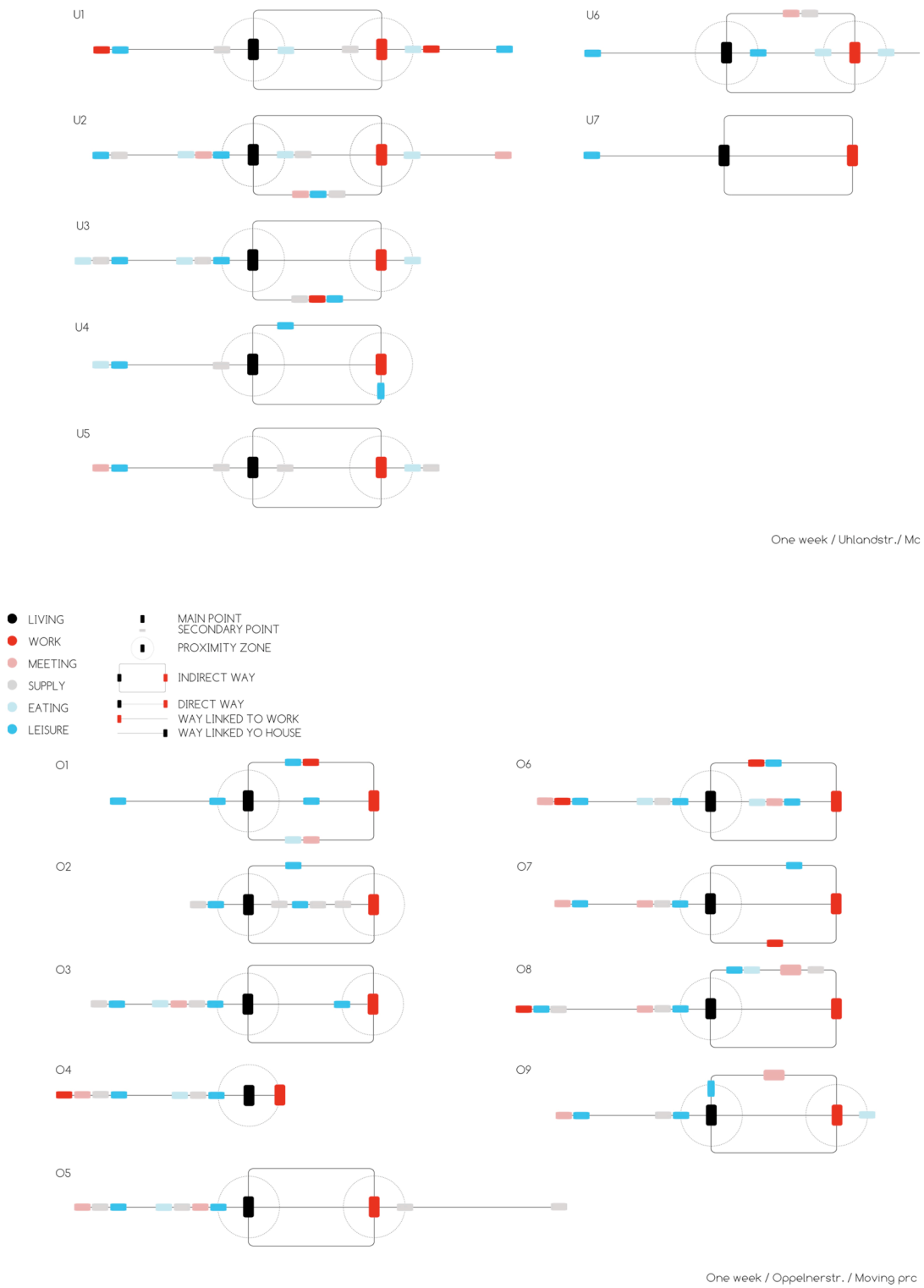


Figure 4-32 Circulation diagrams for different urban dwellers in Berlin (Source: Alfaro d´Alençon 2009).

The diagrams provide the insight that movement is not displayed in economical movement forms for every dweller. The working place and home usually show the main poles between which the movements are organized. Sequential movements can be distinguished from circular movements between both the working and living area.

Urban dwellers' perception of the Stadtbahn

While the previous section was concerned with the way urban dwellers engage mobility with relation to the *Stadtbahn*, this section investigates how urban dwellers perceive the system itself. To this end, questionnaires were used.

The first research questionnaire in 2007 was designed to survey the role the *Stadtbahn* plays according to the perception of the city dwellers. Questions were posed to reveal the city dwellers' opinion of the *Stadtbahn* and how they actually use the system. The survey was conducted at various *Stadtbahn* stations to further understand if there are any stations or viaducts that serve as landmarks or points of reference for city dwellers and, if so, why.

For the purpose of streamlining the work, this thesis distinguishes between how the transportation system was intended to be utilized by its planners, and how it is actually used by the people of Berlin. Therefore, questions were also designed to uncover how the city dwellers '*appropriate*' the system and its planned functions, such as intermodality.

Questions also refer to the respondent's home address location in Berlin to survey if proximity to the viaduct or station affects the use of the *Stadtbahn* as a transportation mode or the uses in the viaducts and if there is a difference in usage and attitude to dwellers who live further away. Besides researching the viaduct and stations, the voicing of preferences and which arches or stations are chosen in their daily routine also addresses how the *Stadtbahn* is viewed by the city dwellers. The questions selected to fulfil these tasks were:

- Which station(s)/viaduct(s) first come to mind when you think of the *Stadtbahn*, and why?
- Why do you frequent them (for travelling, shopping, eating)?
- Do you think the modifications to the system such as increasing intermodality and centrality are having a positive effect?
- What modes of transport did you use to get here and how far do you live from the places mentioned?

The first surveys took place at *Hackescher Markt* (Survey 1- Perception) and *Savignyplatz* (Survey 2- Perception) in the summer of 2007. Aproximately, 60 people of different ages were surveyed at *Hackescher Markt*. Shortly after the rankings of responses between the stations and viaducts were completed, the next survey began at *Savignyplatz*, where 60 people were also interviewed.

- **Which station(s)/viaduct(s) first come to mind when you think of the *Stadtbahn*, and why?** The first survey produced clear results concerning the first question. The most frequently named viaducts were located at *Hackescher Markt*, the *Hackescher Markt* area surrounding the station, followed by *Savignyplatz* in the western part of the city. The remaining sites were further east, in the viaducts of *Alexanderplatz, Jannowitzbrücke* and *Ostbahnhof*. A similar picture was painted by the *Savignyplatz* survey. The most frequently named viaduct was *Savignyplatz,* followed by *Hackescher Markt*. Then, mentioned locations remained in the western part of the city towards the *Friedrichstrasse* station. The subsequent viaducts named were *Tiergarten* and *Friedrichstrasse*, respectively.

- **Why do you frequent the space (for travelling, shopping, eating)?** The second question explored the actual use of the mentioned viaducts. In follow-up questions, the respondents were asked to elaborate on how they discovered these places and what personal attachment they had to the particular areas. The accounts depended largely on the age of the respondent and detailed their visits to the places and the changes they had witnessed over the years. A significant result was that people named viaducts that they do not use in their daily routines, for example, in Survey 1 the *Ostbahnhof* viaduct space was cited, as was the *Tiergarten* viaduct space in Survey 2. Furthermore, the viaducts that were part of the respondents' routines revealed a variety of uses. One of the most common motives for using a viaduct was for leisure—activities such as perusing the station, eating and exploring the surrounding areas were mentioned. The second most frequently cited motive for visiting the arches was that the viaducts housed the respondents' places of work. They worked for instance as serving staff in cafes, bars and restaurants or as sales staff in small retail shops like bookstores. A number of generally young people mentioned the development of the club culture around the viaducts in *Mitte*. Berlin-based respondents in particular said that they were always searching for new

hotspots or underground clubs in an effort to avoid places overrun by tourists. At this time the viaducts close to *Friedrichstrasse* were home to some of these newly established clubs. The last prevalent reason for visiting the arches, especially in the case of the older interviewed persons, was tourism. In this case, the technical details of the viaduct system were a very well-known fact.

During the survey on the uses of the station and the viaduct, the stations produced different information to that of the viaduct. Here, the named station of preference was not the same as the viaduct. In this case, people referred to those stations closest to where they lived. In the case of Survey 1 (conducted at *Hackesher Markt*), the most frequently named stations were *Alexanderplatz* followed by *Friedrichstrasse*. Second to these were *Hackescher Markt*, *Zoologischer Garten* and *Savignyplatz*. In the case of Survey 2 (conducted at *Savignyplatz*), the results were of a similar nature. The most frequently named stations here were *Zoologischer Garten* and *Charlottenburg*, while *Savignyplatz, Friedrichstrasse* and *Hackescher Markt* were secondary.

Thus, results from the viaduct questions show that those interviewed at the East Berlin station named stations on the east line, particularly the interconnecting stations, while correspondingly, those interviewed at the West Berlin station named stations on the western portion of the line. Furthermore, most of the people interviewed mentioned that the station where they were interviewed (either *Hackescher Markt* or *Savignyplatz*) was either their home stop or a interchange station used in their daily routine. A surprising outcome of the survey was how seldom *Hauptbahnhof* was mentioned. From Survey 2, the central station was mentioned by only 2% of the 60 respondents, while in Survey 1 the figure was only slightly higher, at almost 5%.

- **Do you think the modifications to the system such as increasing intermodality and centrality are having a positive effect?** The third question concerning the outlined intermodality and centrality of the system seemed to uncover a lack of awareness of this issue. Even if people expressed concern about the provision of parking spaces at *Hackescker Markt* and *Savignyplatz*, most respondents had not taken advantage of the interchange opportunities from car to the *Stadtbahn* system.

- **What modes of transport did you use to get here and how far do you live from the places mentioned?** Most of those interviewed had used public transportation to get to the areas. Others had come by bike or on foot

and a few had arrived by car. Even after the centrality of the system was made known to the respondents it did not become a point of discussion. The respondents were not well informed about the national and international routes from *Zoologischer Garten* and stressed their uncertainty about the transportation system's development. One sentiment often expressed was the confusion that other hubs like *Südkreuz* now offered the possibility to travel national and internationally. At *Hackescher Markt* most of those interviewed (51%) lived closed to the stations. In the case of *Savignyplatz*, 40% lived nearby. Of the transportation modes within close proximity to their places of living, no preference for the *Stadtbahn* could be established. In general, 50% of the respondents used the *Stadtbahn*. People chose the transportation system based on the options for how to reach a given destination. Those who were not using the *Stadtbahn* system used subway stations close to *Hackescher Markt* (U8 *Oranienburger Tor*) and to *Savignyplatz* (*U2/U9 Zoologischer Garten*).

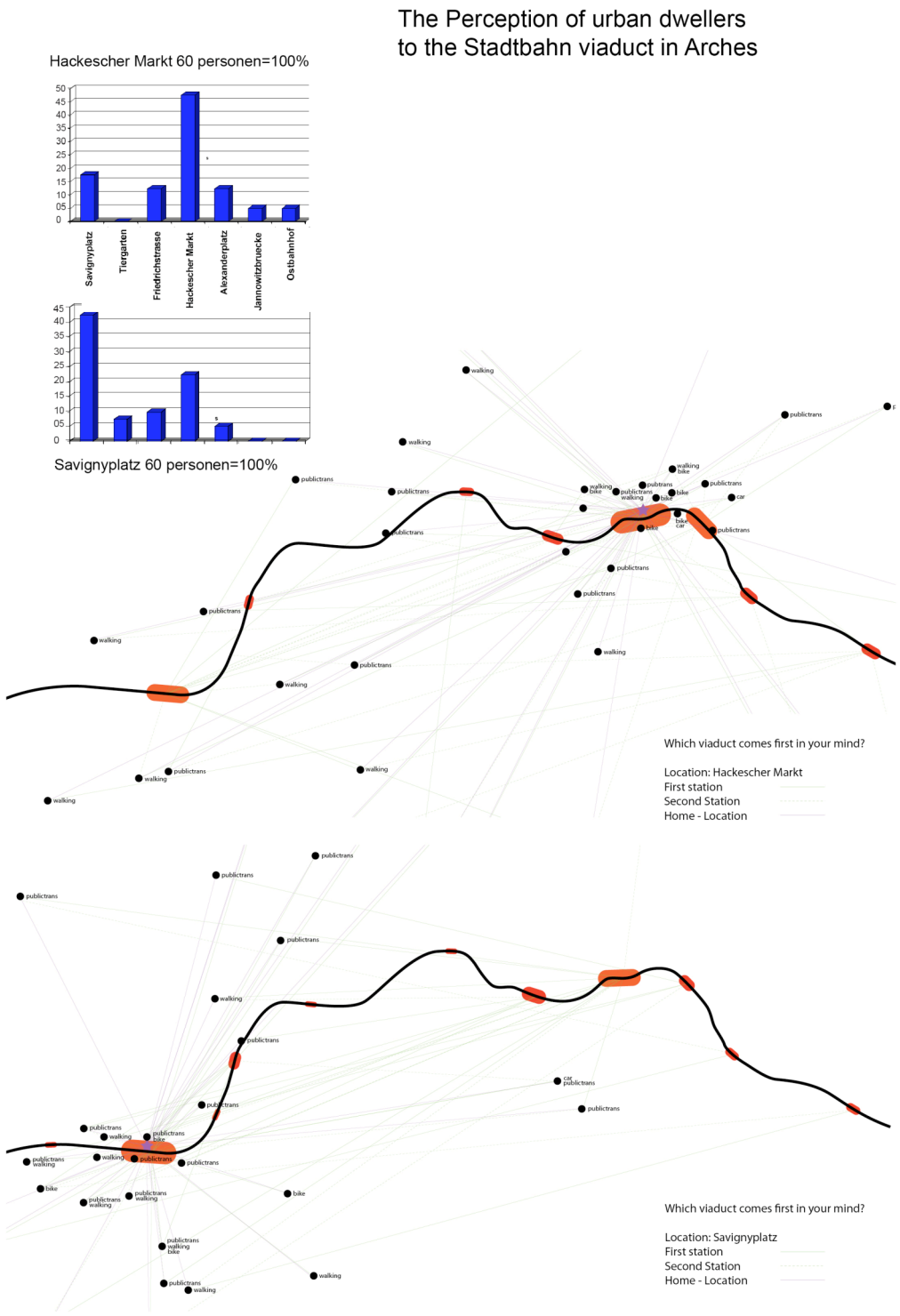


Figure 4-33 The urban dwellers' perception of of the Stadtbahn Viaducts and Arches (Source: Alfaro d´Alençon 2009, drawing Bauerfeind).

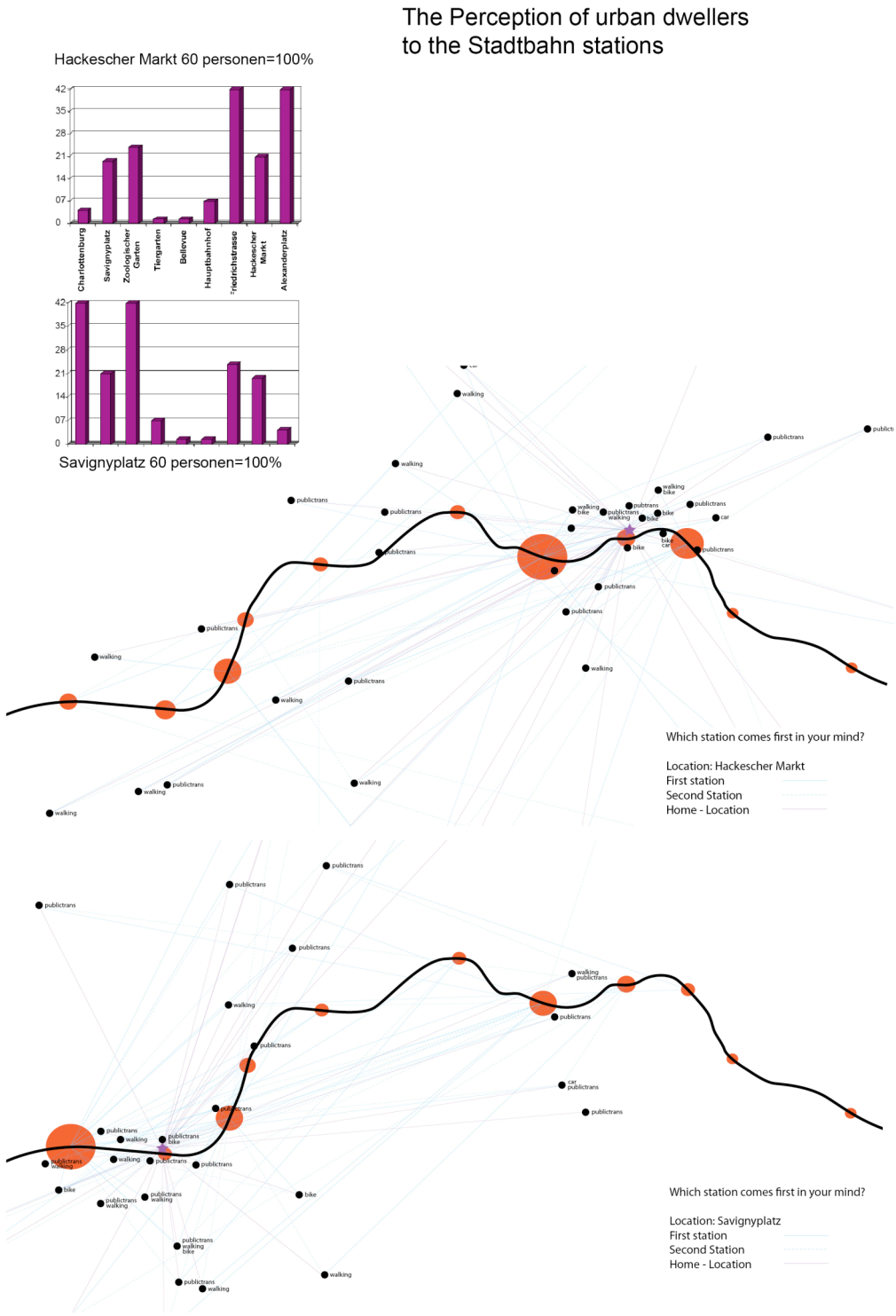


Figure 4-34 The urban dwellers' perception of of the Stadtbahn Stations (Source: Alfaro d´Alençon 2009, drawing Bauerfeind).

The relationship between actors in the Stadtbahn space development

While the previous section was concerned with dwellers routes and perceptions of the *Stadtbahn* project this section provides the analyses of the relationship between the actors involved in the *Stadtbahn*'s spatial development. As stated by scholars (e.g., Smets (2006); Bertolini (1996)), the development of urban transportation areas engages a wide range of actors (Bertolini 1996:338). The local government and the railway company usually play the leading role in the process. The *Deutsche Bahn AG*, with its public private partnership structure with the German state, plays this role in the case of the *Stadtbahn*. In addition to managing transportation development, the *Deutsche Bahn AG* also owns the '*Bahnnebenfläche*' (auxiliary areas) such as the viaduct arches. Different operational clusters in the Deutsche *Bahn AG* manage the arches, such as DB Station & Service in the area of the station and the *DB Service Immobilien GmbH* for all other viaducts. Furthermore, together with the *Vivico Real Estate GmbH* investment group, the *Deutsche Bahn AG* also co-owns the areas adjacent to the *Stadtbahn* line and the station squares (e.g., areas around the *Hauptbahnhof, Alexanderplatz* and *Ostbahnhof*). The development planning is based on ownership criteria, the renters of the viaduct spaces and the businesses in the stations. Further actors are also involved in the process, such as the local authorities, investors and project developers as well as public interest groups and local residents. As Bertolini states, each of these actors, has their own approach to the development process and are vital to the development of the project.

Furthermore, because the primary function of these areas is to provide transportation, their development lies out with the control of the local planning authorities. This continues to be the case even when the spaces are no longer used for rail transport related purposes. The development and conversion of disused railway areas depends on a ´dispensability assessment' by the *Deutsche Bahn AG* and the formal liberalization of the space by the Federal Railway Authority. Therefore, the development of the *Stadtbahn*'s 'auxiliary areas', a considerable area of Berlin's inner-city, is subject to a complicated political planning and mediation process.

In the past these complex and time-consuming processes, combined with a lack of information and disagreements between the *Deutsche Bahn AG* and the local authorities often led to delays and conflicts in the development of railway land and properties. Planners and local authorities saw this as an impossible dilemma. The imbalanced negotiation processes described here indicate the complexity involved in establishing new public transportation strategies. This was clearly the case during the

development of the exterior space around the *Hauptbahnhof* (see 5.2) as well as in the conversion of the viaduct areas. The large number of actors and interest groups involved in the conversion and subsequent letting of the viaduct arches, as well as the *Deutsche Bahn AG's* complex management and organizational structures, have received significant criticism.[90] On the marketing side alone, several landowners (with their own financial interests) can be involved at a single location. Besides the *Deutsche Bahn AG* (Holding) and its subsidiaries there are further private railway infrastructure enterprises involved, as well as the *Bundeseisenbahnvermögen*.[91]

According to Bertolini, the local authorities could play an important mediatory role in this conflict of interests. Nevertheless a shifting process from service provision towards the provision of economical development remains. This may also be the case for the *Stadtbahn* in Berlin, although the omnipresent *Deutsche Bahn AG*, as transportation provider, owner and landlord, may call for other mediation strategies. Therefore, the local authorities' position is even weaker.

In order to simplify the complex process and to avoid negative developments, *Wucherpfennig* has referred to complex redevelopment of the railway as to the *Deutsche Städtetag*'s 1999 decision to create an *Arbeitshilfe* (guidance) for the local authorities, listing the key railway development aims and a summary of the most important legal issues. In 2003 the Federal Railway Authority created guidelines to accompany the process as the *Präsidialverfügung* (decision of the president of the court) (Wucherpfenning 2006:147).

In Berlin cooperation projects were initiated between the city government, the local authorities and the *Deutsche Bahn AG*.[92] An integrated restructuring strategy was to be developed by the *Projekte 21* Group (centrally planned by one main ´actor group´ of architects and engineers and maintained by the *Deutsche Bahn AG*). However, the failed cooperation between the architects (GMP) and the *Deutsche Bahn AG, witnessed* by the areas of land around the *Hauptbahnhof* that have been disused for several years have led to criticisms of the 'improved' process. It is important to differentiate between the station and the viaduct in the analysis of the actors and their

[90] see Newspaper critics on the development process of the railway space

[91] see http://www.bev.bund.de/bahnreform.htm (accessed July 20th 2009)

[92] see for a comprehansive outline BDA, Deutsche Bahn AG, DAZ, von Gerkan (1997)

guidelines. The arches represent a more diverse space with diverse users and interactions whereby the station shows 'users' that are dependent on the transportation and commercial activity.

The commercial activities in the Stadtbahn transportation space

The commercial activities in the *Stadtbahn* transportation space have been researched, firstly in terms of the viaduct's commercial uses and secondly through the commercial development in the station.

The official aim of the *Deutsche Bahn AG* enterprise is to increase the attractiveness of the stations and their surroundings as access points to local and national rail transportation as well as to city life. The focus is placed on the stations with their 'identity building' architecture and pleasant, user-friendly atmospheres that exceed their transportation function and contribute to 'strengthening the residential and economic functions of the city' (see 4.3.2).

With the modernization of the stations in the 1990s, a common measure was the extension of the *Stadtbahn* station to offer additional functions. This can be observed in the rebuilding of the stations *Zoologischer Garten, Friedrichstrasse, Alexanderplatz* and *Hauptbahnhof* and their revitalization to include additional functions such as commercial activities. Before these large-scale projects were undertaken in the reunified capital, changes had also been made to the viaducts in the 1980s after management was handed over from the GDR to West Berlin. Due to this significant change in ownership, several of the viaduct spaces in West Berlin re-opened. This can be observed in the viaduct arch register of 1985 and will be explained in detail in the following section.

The displacement of commercial activities in the viaduct space

As obtained from the interviews with *DB Station & Service* additional activities for the viaduct and the station are organized by the *Deutsche Bahn AG*, but through different organizational clusters. As explained in the previous section, the stations uses remain managed by the Deutsche Bahn Group, *DB Station & Service* and include the station allocated viaducts. The *DB Service Immobilien GmbH* manages the renting of viaduct spaces outside of the station area. In the *DB Station & Service's* renting portfolio, preference is given to the renting of the viaduct for restaurants and cafes. The income

generation of both activities has been show in the past to be profitable. The *DB* has adapted its renting payment structure to include a direct participation in restaurants and cafes' profits while other uses in less frequented areas still have a rent price calculated per arch and square meter.[93]

The type of additional use in the viaduct structure outside of the station area is mostly framed by its urban surroundings. These schemes maintain the validity of the historical layout and thus provide the high mixed-use function particular to the viaduct. While the businesses in the station area offer reduced services and function only as an additional commercial strip, the additional viaduct space still incorporates in general a wide variety of different uses. The viaduct functions in a broader sense as an indicator for the spatial use characteristics of the adjacent districts. Thereby, it functions as a 'blank', which adapts its own function and appearance depending on the specific qualities of the adjacent area.

With its heterogeneity and adaptability to the adjacent area, a categorization of the use of the viaduct space is difficult. The current processes of inner-city reconstruction are also shaping several areas adjacent to the viaduct space. These changes also provide new patterns for the arches. This characteristic can be observed by the peculiar characteristics of the viaducts arches situated in between two districts or those that border an adjacent area. In this case, the viaducts adaptation to the diverse adjacent areas results in the development of two different functional sides of the arches, with successive adjustments made to the corresponding side. Due to these peculiar characteristics, the viaduct can literally, on one side, be the border for a private backyard of a Berlin block or even school (*Savignyplatz*) and on the other side, accommodate a shop or a flea market (*Knesebeck Strasse* at *Savignyplatz*).

A rare occurrence visible at the newly redesigned area around the *Fasanen* arches between *Zoologischer Garten* and *Savignyplatz* (new arch development with the development of the *Neues Kranzler-Eck* by Architect Helmut Jahn) is that due to the public space surrounding the viaduct structure, the commercial activities housed in the viaduct spaces are accessible from both sides.

[93] Personal communication with the arches renters at Savingyplatz (2009/2010)

- **Viaduct arches as cafés, restaurants, galleries and small retail units.** Dense urban areas, such as those between *Savignyplatz* and *Zoologischer Garten* or from *Friedrichstrasse* to *Alexanderplatz*, support viaduct spaces with a mixture of functions for commercial uses like small retail shops, galleries, fashion boutiques, cafes and restaurants. Even within this categorization, distinctions can be made. For example the large amount of restaurants, cafés and discotheques that have developed in the viaducts of the *Hackescher Markt* area corresponds to *Mitte* district establishing itself as a key nightlife. *Savignyplatz* viaducts contain shops, galleries and bookstores, sometimes named after their locations in the arches like *Bücherbogen* (book arches). The area along the former *Moabiter Werder,* once an industrial area close to the River Spree in the *Tiergarten* district, has now been converted into a new housing area. Correspondingly, the viaduct arches have been filled with new cafes and restaurants. The area around *Friedrichstrasse* includes the antique and flea markets formerly located at *Nollendorfplatz*.[94]

- **Viaduct arches at the zoo, garages, workshops and new festival spaces.** In the green areas of the *Tiergarten* between the *Zoologischer Garten* and *Bellevue* stations, the viaducts house functions for the zoo, such as storage arches. However, several arches near to the *Zoologische Garten* station have been closed down. In this green area, different functions of the arches around the stations are visible, particularly at the *Tiergarten* and *Bellevue* stations. Shops for daily commerce—such as a bakery or greengrocer—are located around the station. Due to the use of an adjacent area for a weekend flea market and the close proximity to the Technical University, several restaurants and cafes near *Tiergarten* station seem here to stay, one of them being the *Tiergarten Quelle* restaurant. In the area between *Bellevue* and *Friedrichstrasse*, a former industrial area of the city, the viaduct contains workshops for garages and other small production units. This layout continues from *Alexanderplatz* to *Jannowitzbrücke*. Mostly the arches incorporate shops for commercial activities along with car retail and rental shops or simply garages. Along with the development of a new riverbank for the River Spree close to the new governmental area between

[94] Personal communication with the arches renters at Friedrichstrasse

Hauptbahnhof and *Friedrichstrasse*, outdoor activities and 'strand bars' (beach bars) have been added along the surrounding water line. The viaduct has not remained untouched even by these leisure activities as seen 'vis-à-vis' to the Monbijou Park in Mitte. Close to the *Stadtbahn* line near *Friedrichstrasse*, the viaduct offers small cafes, restaurants and retail shops for outdoor activities. In addition to the newly awakened outdoor activities at *Jannowitzbrücke*, along the River Spree, in recent years several galleries have temporal open the 'viaduct' doors at *Jannowitzbrücke*.

The displacement of commercial functions in the Stadtbahn stations

The *Deutsche Bahn (DB)* categorizes stations for the layout of commercial zones according to passenger loads, station structure and the frequency of stopping trains. Therefore, the main distinction is between the stations for quick interconnection (*Umsteigebahnhof*) and train stations where travellers linger (*Verweilbahnhof*).[95] Compared with the transportation provision, the marketing of the station for additional uses remains an additional function for the station. Rent, leases and DB's own service and commercial initiatives, such as *DB Car Sharing* and 'station point' commercial units provides the DB station with 30% of the total revenues.[96]

However, during the interviews with representatives of the *DB Station & Service* they stressed that micro-analyses were incorporated into the decision-making regarding the allocation of uses in the stations. These provide a better understanding of the station surroundings and the needed structure of commercial activities.[97] Meanwhile the survey reveals a certain relationship between the 'pre-determined' role of the station within its network role and the allocation of additional uses inside the stations. Here, a certain typological layout between the commercial activity and the transportation provision can be observed, the result being the allocation of additional commercial zones between the levels of transportation service. This is particularly visible in the layout of the extended levels of the stations providing the interconnectivity from the overground train service to other lines or to the subway (*Zoologischer Garten*,

[95] Personal communication with DB Station & Service (2009)

[96] Personal communication with DB Station & Service (2009)

[97] Personal communication with DB Station & Service (2009)

Friedrichstrasse, *Alexander Platz* as also *Hauptbahnhof*). The second location of additional commercial activities is the area around the station entrance, which is usually the level between the overground train system and the subway platform. A peculiar characteristic arises here in the provision of access to the commercial activities. Businesses are typically only accessible from the inner area of the station (as seen in the interconnecting stations of *Stadtbahn* rail service to the regional level and the subway - e.g., *Zoologischer Garten, Friedrichstrasse*, *Alexanderplatz* and the hub, *Hauptbahnhof*).

- **The `*Verweilbahnhof*´: a train station to 'linger' in.** The survey explains that the 'hub' is classified as a station to 'linger' in, a *Verweilbahnhof*. Accordingly, the additional commercial zone is extended to a variety of commercial shops and services in layouts similar to a commercial mall. The station provides the typical layered arrangement of commercial zones for up to 80 shops, sandwiched between the levels of transportation. Following their restructuring, the organization of commercial activities varies at interconnecting stations, as already explained, as seen at *Zoologischer Garten*, *Friedrichstrasse* and *Alexanderplatz*. The offer of additional uses in the highly frequented spaces of these stations is immense. Usually the shops offer 'to go' services. Examples of these 'to go' services between the interconnecting the lines are fast food outlets, bakeries, fruit and vegetable stands, small stores, drugstores, press and tobacco shops and flower stores. These businesses are allocated between the overground train platforms and the subway lines in the subterranean levels of the station. In comparison to the hub, they feature a horizontal layering system to provide the dense mixture of transportation provisions and shopping activity.

- **The '*Umsteigebahnhof*´ interconnecting train station**. While the interconnecting stations show high activity levels of additional commercial provision, the contrast is noteworthy in the stations interconnecting with the *Ringbahn*. In these stations (e.g., *Westkreuz* and *Ostkreuz*), this secondary activity is less pronounced and provisions of small snack and beverage stores are smaller and less advertised. At *Westkreuz* and *Ostkreuz*, small shops sell snacks and fast food on the same level as the transportation service. Again different to the *Westkreuz* case, *Ostkreuz*, with a higher user rate, additional houses a flower kiosk, bakery and press and tobacco shop.

- **The *'Verkehrsstation'* station** as seen at *Savignyplatz, Tiergarten, Bellevue* and *Hackescher Markt* offers less variety in its provision of additional uses within the station space. This example shows the radical layout of the one-level transportation provision design, with no significant additional uses. Businesses like that at *Ostkreuz* are situated outside of the station entrance. The aboveground platform level only contains the transportation service. While the interconnecting stations shows the layout of commercial zones accessible mostly form the inside and only from the outside via the viaduct, the *Verkehrsstation* (again, *Tiergarten, Bellevue, Hackescher Markt* and *Savignyplatz*) generally features multiple viaduct arch entrances along with shops accessible from both inside and outside the station.

4.3.3 The production of urban Space with the Railway in Berlin between 2005 – 2009

This section elaborates on the significant network and rail elements (viaduct and station) development, focusing on the viaduct transformation process and taking into account the changes resulting from the transportation development, commercial activities and urban dwellers practices in the survey between 2005 and 2009.

In the time frame of field research, the *Stadtbahn* network received a new network outline. The new network outline has been operating since 2006 and has completely reshaped the pattern of intra-city access and inter-city rail connections (see 4.4.1). The former disrupted railway network structure was restructured with a network concentration—the 'hub'—at *Hauptbahnhof*. This provides the network with a strong point of planned intermodality and intra- as well as interconnectivity. The *Hauptbahnhof* was located centrally in geographic terms, but its site on disused land where the Berlin Wall stood remains largely undeveloped after three years of network operation. Planned junctions with the 'hub', such as the northern connection to the *Ringbahn*, the planned connection to the tram system and the subway line are still in the development stage.

In addition, interconnecting stations (such as *Zoologischer Garten, Hauptbahnhof, Friedrichstrasse* and *Alexanderplatz*) have been downgraded for inter-city traffic. However, they were also redeveloped to meet the new service demands projected by the transportation management of the *Deutsche Bahn*. Small stations, such as *Hackeschermark* and *Jannowitzbrücke*, have also been refurbished. In addition, an

increasing amount of radical redevelopment changes around the *Stadtbahn* has been observed as a result of the inner-city redevelopment by the *Planwerk Innenstadt* initiatives (such as the area around the *Zoologischer Garten, Hauptbahnhof, Friedrichstrasse* and *Alexanderplatz*). Further to the transportation redevelopment and urban project initiatives, recent competitions for the new city center have also affected the *Stadtbahn* transportation areas. These include the *Luisenblock West* competition in *Mitte* district, *Moabiter Werder* area in *Tiergarten* and smaller projects developed in parts of the refurbishment of City West in *Charlottenburg*, as well as the recent construction of *Alexanderplatz.* Therefore, it could be stated that, during the time of the survey, at least 60% of the areas surrounding the viaduct have been redeveloped or are in process of redevelopment. This has affected the appearance and development of the arches to a certain degree.

These developments met with both public and professional criticism and generated controversy. There was neither any professional nor public discussion (only the mentioning of the commercial uses in the public press (see. 4.3)) on the development of the viaduct. However, the entire length of the viaduct runs through the inner city area of Berlin, and is thus actually, as aforementioned, undergoing significant change. The viaduct's role in this development remains concealed, limited to its definition as a delimiting element of sites in the *Planwerk Innenstadt* proposal. The *Pilzkonzept* does not even mention the viaduct in a transportation planning context due to its limited role in the transportation performance of the *Stadtbahn*. This context accounts for the complexity of the transportation space development.

However, questions about what kind of location the *Stadtbahn* transportation area is and the contribution of the viaduct to the *Stadtbahn* project's development are still very valid. In this context, the survey reveals recent development dynamics and significant knowledge on:

a. the character of the viaduct

b. the viaduct's development, which is contrasted with the specific development tendencies found in the stations and the station squares

4.3.4 The character of the Stadtbahn´s viaduct: Identity builder and the loss of arches and manufacturing units

The redevelopment and redefinition of the station means a reappraisal of the arches, as significantly seen in the development of the *Hauptbahnhof.* In this case, large portions of the viaduct arches were demolished and are no longer part of the station and surrounding area's design or identity. The new 'integrated' station design is based on a column structure that significantly alters the relationship between the arches and the station. As seen in the smaller stations of the system, like the *Verkehrsstation*, the viaduct serves as an enlarged entrance area that acts as a connection between the station and the adjacent area. It enables a certain dialog between the station and its surroundings. The reduction from an enlarged entrance area to a simple entrance, as seen at the *Hauptbahnhof*, makes the station appear 'inward' looking and ignorant of the spatial potentials inherent in the dialog with its surroundings.

Related to this context, the survey uncovered an interesting characteristic, namely, the relationship between the diversity of (commercial) activities in the station and those in the corresponding viaduct arches. These activities related to different development patterns—in the station, the businesses are aligned to the station network layout, while the viaduct uses are influenced by the adjacent area. Through the proximity of both the station and the viaduct, the corresponding patterns create a complementary relationship. The description of this relationship is based on *Friedrichstrasse* (see graphic), where the surrounding area embraces a multi-dimensional space. Since the station's surrounding landscape consists of large-scale city structures like office buildings, businesses, key cultural institutions, historical objects and tourist attractions, and the station serves as an important traffic node (both north/south and east/west), the complementary relationship of station and viaduct is fully displayed. The commercial activities in the station are based on the fast service of passengers, while the viaduct space, which features antique shops and fashion retail, reflects the retail character of the adjacent area.

New tendencies: Changes of uses towards more restaurants and cafes, less manufacturing and retail and the loss of viaduct arches

The survey reveals that the development of the *Stadtbahn* space is still associated to a high degree with diverse activities whereby commerce and trade dominates. However, within the viaduct register, changes in the type of uses in the viaduct arches are visible.

The register indicates that in 1985, after the change in *Stadtbahn* management in West Berlin, the occupancy increased significantly to 50% on average, with nearly 35% restaurants and cafes, 30% retail shops and 20% manufacturing.

Although these figures perhaps indicate the beginning of a trend towards gastronomy, new tendencies can be distinguished for the viaduct arches in the station area and thus related to the urban area. Figures from 2004 to 2009 indicate a continued increase in restaurants and cafes (upwards of 40%), with the number of vacancies increasing in comparison to 1996 as well (see figure 4-33). Some factors come into play, revealed in the interviews with (ex) renters of the viaduct arches, largely in the areas of *Savignyplatz* and *Hackescher Markt*. The increase of empty viaduct spaces is assumed to be largely due to the increase of rental prices and the lack of high-profit businesses able to afford the rent. The conclusions from data collected at *Savignyplatz* and *Hackescher Markt* seem to hold true for the new areas of *Moabiter Werder* as well. All three areas show a shift from small retail and manufacturing towards the installation of cafés and restaurants.

In this context, the struggle of actors related to the development of transportation space as exposed by the conceptual framework of this research work (see. 2.3) becomes very apparent. It seems that the powerful DB management are imposing a certain control on the renting profile of the arches and strongly influencing the decision-making affecting the arches' development. Due to a profitable perspective in the renting portfolio of DB Station & Service, their preference is to rent the viaduct space to restaurants and cafes. This survey discovered that the development of the viaduct arches is largely dependent on the changed renting patterns imposed by the DB management, the unclear planning and development structure for the area between the DB and less-enabled actors, and the lack of precedents for viaduct development. This means that the development of the viaduct and its arches in the auxiliary railway space (outside the station area) is subject to complicated planning-political procedures. In the past, these complex and often drawn-out processes, coupled with a lack of information and agreement between the Deutsche Bahn and the local authorities (see:The relationship between actors in the Stadtbahn space development)

Besides the highly conflictive area around the station, it also seems that the developers perceive that the viaduct can be supportive of the 'prestigious' diversity of urban transportation space. The management position and the project development process within the viaduct can be described through the case of the *Kranzler Eck* at City-West

in *Charlottenburg*. A common thread observed is the development of the arches to provide more visibility for the project. Thus the arches may be faced with a change in function from workshop area to restaurant or retail, or simply be used to 'set the scene'—to provide a suitable backdrop for the planned commercial development. The restructuring process may also involve the removal of arches to increase accessibility (e.g *Kranzler Eck*, *Moabiter Werder*). The viaduct register also accounts for a loss of 5% of the arches. The loss of arches can be explained through the destruction of arches due to the development of the *Hauptbahnhof* and for reasons of connectivity in the aforementioned new projects that have emerged in the inner-city.

However, in the urban dweller's mind, the viaduct space remains a space that embraces an attractive site development with the diversity of functions that can be still observed in the area. The location of the viaduct and its arches in the areas of new emerging urban development let the viaduct become part of diverse ongoing urban (re)developments in Berlin. Throughout Berlin's recent redevelopment, the *Stadtbahn* line has served as a stimulus to discover the city and is used by tourists and inhabitants alike for this purpose. The viaduct is a visual presence at Berlin's iconic sites—from affluent *Charlottenburg* to the *Friedrichstrasse* business district to the former City-East and *Alexanderplatz*. Large parts of the *Tiergarten*, as well as the new government district and the zoo can be experienced through the viaduct line. The survey indicated that the viaduct is also identified as a landmark in the city, independent of its transportation function. Different to the stations, which remain transportation areas in the dwellers' perception, the survey exposed a clear preference for the arches in the areas of *Hackeschermarkt* and *Savingnyplatz*. Inhabitants are connected to the arches by a certain degree of personal attachment derived from the diverse experiences they have had there.

4.3.5 The contrast to the principle of the station and its station square: The empty square

With the phenomenon of the 'Renaissance of the Station' little attention has been paid to the development of the station square. The new station has been the key element in the development, emerging with a highly specialized transportation logistic approach to follow the system's new outline. The stations are expected, either through downgrading or upgrading (*Zoologischer Garten, Ostbahnhof, Friedrichstrasse* or *Hauptbahnhof*) to meet the estimated passenger demand calculated by the transportation management. The stations provide specialized services, such as intermodality, depending on their

position in the network—as a ‘hub’, interconnecting station or simple station (see 4.4.1). In comparison, the station square, which lies between the station and its urban surroundings, has been little affected by recent developments. This refers to both the physical space dimension as well as the activities developed in the area.

The survey supports the idea that stations typically offer internal access to the businesses housed within. This adds to the compact indoor spatial organization and makes the station an independent element in the adjacent context. This development makes the square appear as a ‘resting’ area. The lack of interaction with the immediate surroundings additionally reinforces the ‘island’ characteristic of the station (as seen in *Hauptbahnhof*). This argumentation can be supported by the figures obtained by counting people in stations for interconnectivity with a high degree of additional ‘inner’ functions (*Alexanderplatz, Zoologischer Garten* and *Hauptbahnhof*) and in their station squares. In all three cases a certain relationship between the ‘self referential’ uses of the station and the empty station square can be established. The key factor of dialog between the station activities and station square is the business structure and its orientation.

At *Alexanderplatz*, the station which houses businesses that are accessible from in and outside the station, the density of the station square is lower than inside of the station. This trend increases drastically in the case of *Hauptbahnhof*. The commercial activity in the station *Hauptbahnhof* is designed to be accessible only from the inside. The result in terms of density shows a crowded and dense inner station area and very low density on the station square. The urban impact can, therefore, be summarized so: stations with high traffic demand and commercial activities orientated to the inside function as independent elements without an articulated interchange with the outside. Therefore, the station square becomes an urban void. The figures change with the orientation of the businesses and with the proximity of the adjacent area, as seen in stations like *Friedrichstrasse*, with a high building density and predominance of residential development.

The density levels recorded during the research at *Hackescher Markt* and *Savignyplatz* further support the assumption. Both these stations show the opposite tendency. While the density inside the station is low, it is very high on the station square. The station orients itself outwards. The presence of commercial activities with a facade that opens directly onto the station square articulated highly frequented areas where people spend time. Commercial accessibility from both the inside and outside of the stations provides

a zone of interchange between the station and its station square. In stark contrast, intense transportation use shapes the squares at stations where the squares are consumed by parking lots and transfer areas for buses (e.g., *Zoologischer Garten, Ostbahnhof* and *Warschauer Strasse*).

From the case study evidence, it appears that when both transportation and commercial uses are accessible only from inside the station, the station square becomes an unimportant feature, and the dialog between the station and the surrounding area is not well articulated. Scholars such as Bodenshatz or Ahlfeld support this finding with their own research, reflecting on the consequences of station square development and the development patterns of the redevelopment of the railway project in Berlin in general.[98] In recent railway development, the station square has remained forgotten and neglected. However, recent railway development has resulted in 'drive through stations' with two station squares. Here the square acts as a distributor to the adjacent urban area—as a 'foyer' for the city. Bodenschatz cites the square's limited development as a result of the short time dedicated to its development as part of the railway system. It has not factored in either planning circle discussions or public debates. Based on economic research on railway development, Ahlfeldt instead argues that in the case of the post–reunification realignment of the railway system in Berlin the relevance of the 'traditional' formula is questionable. The important connectivity and the significant reduction of travel time traditionally attracted commercial activities to the stations and their surroundings, making them a critical factor in the urban property market (See 2.2.3). Today, since employees are now virtually and digitally connected to their workplace, they do not necessarily have to organize themselves around direct access to the transportation area.

[98] Both scholars presentation at the Technical University of Berlin, Workshop, " Railways, Real Estate & The re- making of cities in the 21st Century" Rail development mega-projects in Europe& beyond, October 16th and 17th 2009

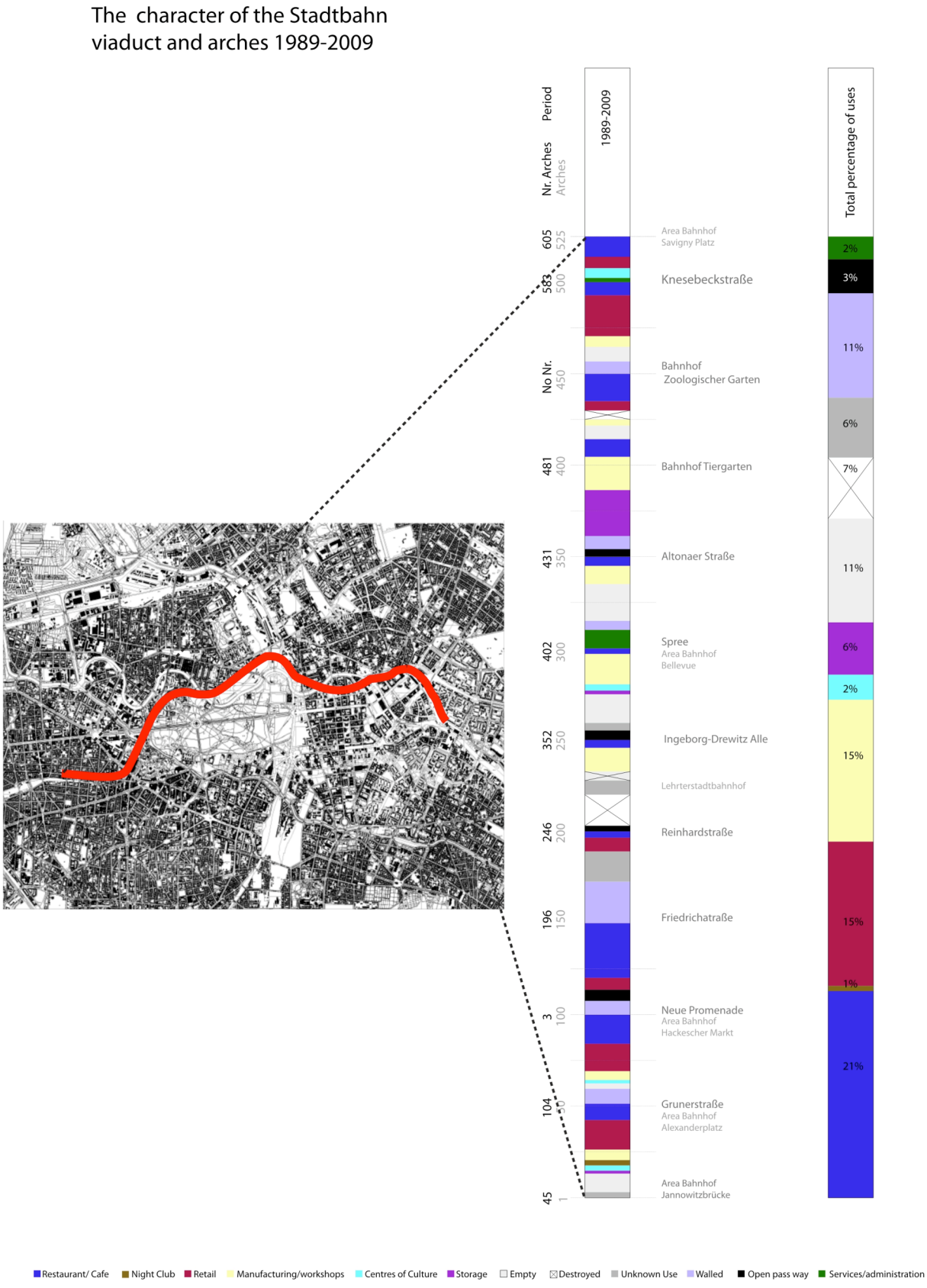
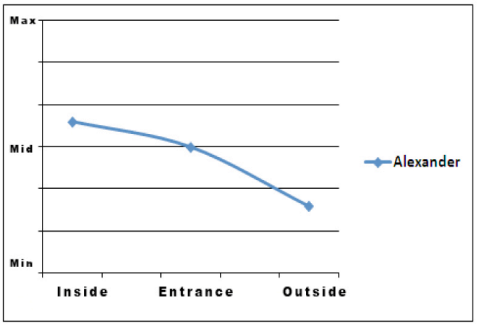


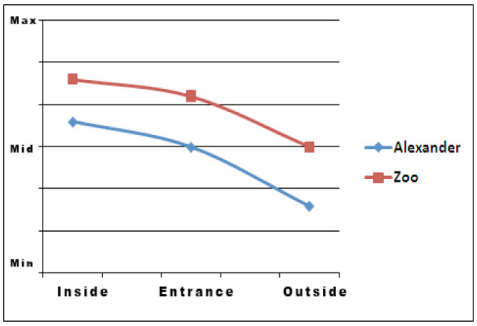
Figure 4-35 The production of urban space in Berlin *Stadtbahn* space between 2007 – 2009: The uses of the viaduct arches (drawing by the author).

1.1. Alexanderplatz

The flow of people declines from inside-entrance-outside gradually. (Picture 38/Chart 01)



1.2. Zoologischer Garten (Picture 39/Chart 02)



1.3. Hauptbahnhof

But the situation is quite different in Hbf: (Picture 40/Chart 03)

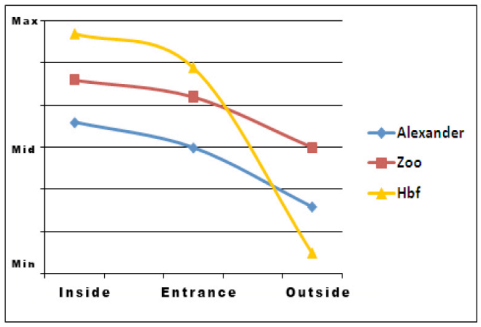
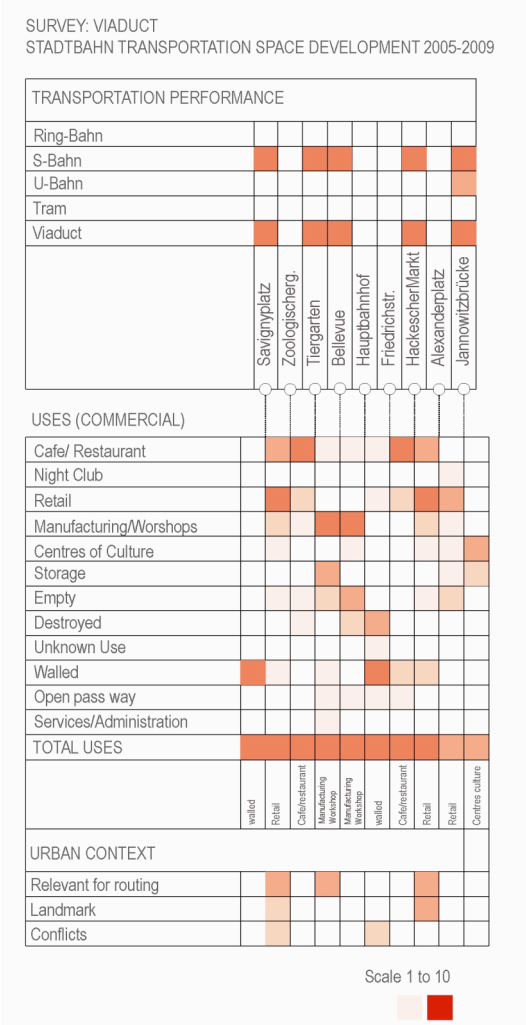


Figure 4-36 Images of the station square (Sources: Alfaro d´Alençon 2009).

At Alexanderplatz the flow of people declines from the inside to entrance to the outside gradually. This tendency can be confirmed at Zoologischer Garten. At Hauptbanhof it increased drasticaly. The amount of people in the station inside is much higher that on both squares. The yellow line already falls sharply in the entrance area.



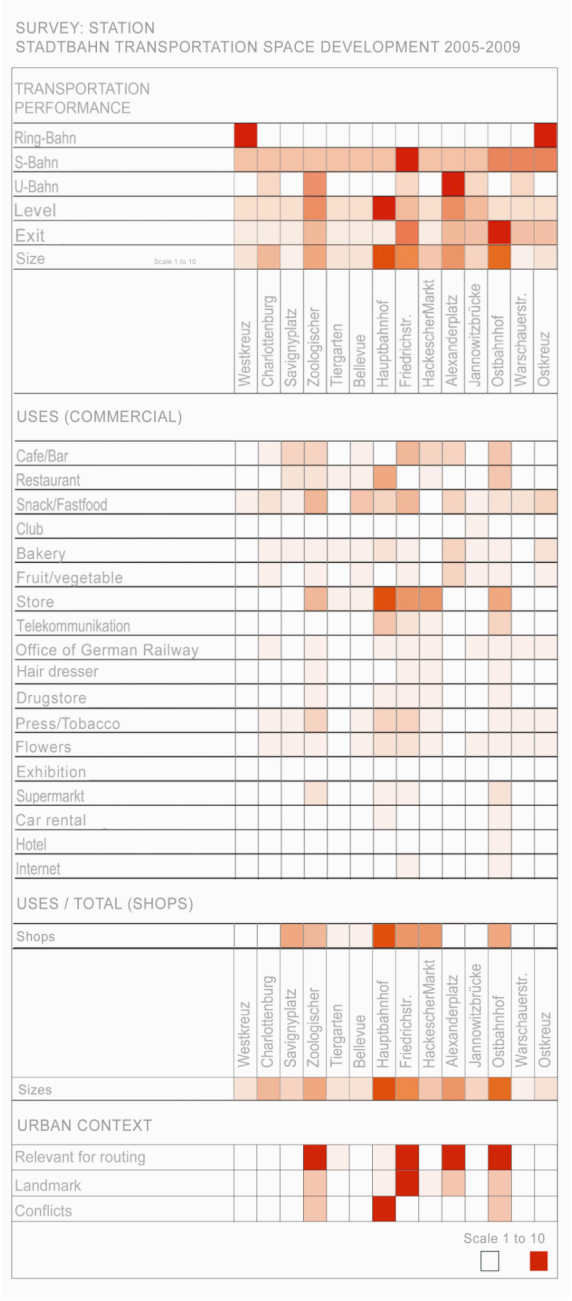


Table 4-3 Survey: Viaduct Stadtbahn and Stadtbahn Station transportation space development 2005 - 2009

Evaluation in terms of transportation, urban, commercial development crossmatching significant intensities in specific areas or stations.

4.4 Synthesis: From network vs. urban space to place-making

The intention of this section is to structure the main findings of Chapter 4 and to reflect on the viaduct's specific development pattern and its particular conditions in the *Stadtbahn* transportation space. The railway space is conceptualized as a social-spatial. It illustrates social life through its structures (in this study based on the transportation development, urban practices and commercial activities). This allows specific patterns factors and mechanisms in the development of the viaduct and its arches to be defined. In this context, the research in Chapter 4 has revealed the *Stadtbahn* space as an emerging process. This is evident as hybridization and its dynamics, as well as in the particular patterns of the railway elements such as the viaduct and the arches. The research was organized to account for different development patterns observed in a historical assessment of the *Stadtbahn*'s development and in a study of the current emerging viaduct development. Thereby, three main areas of the *Stadtbahn* development were identified, namely: the implementation of the *Stadtbahn* in Berlin (see 4.1), the network division during the Cold War (see 4.2) and its redevelopment under the influence of the *Bahnreform* and the '*Renaissance of the Station*' (see 4.3).

4.4.1 The relevance of the viaduct in the Stadtbahn space

1st Research phase: The Stadtbahn space as a socially produced space: Transportation network extension, urban practices and commercial activities

The first research phase (implementation phase and first years of *Stadtbahn* development 1873 – 1910) illustrates the multiple meanings that the *Stadtbahn* space already presented in Berlin and can be described as a place of social presentation as follows. The *Stadtbahn* was one of the most important transportation developments in the city; it was a catalyst of urban development as well as an essential factor of the urban property market at the time (see 4.1). When examined more closely the social influences of the *Stadtbahn* and its influences on the practices and complexities of the urban context become clear.

The network grew rapidly and quickly succeeded interconnecting the inner areas of Berlin (with exception of the city's commercial areas e.g., *Leipziger Strasse* that could not be completely met due to the network line routing change) with several stops. In

addition, the network extension encouraged the growth of the outskirts and the development along the line also catalyzed the merger of the two neighboring cities, *Charlottenburg* and Berlin. The *Stadtbahn* network provided both rapid access to different urban activities and perpetuated the need to extend the railway system in the growing city. Because of the *Stadtbahn* network, several areas were built in the city and its new surroundings. The *Stadtbahn* therefore was a catalyst of urban development. The configuration of the stations and their orchestrated station squares developed and the *Stadtbahn,* through its important transportation function, became a place in which the important members of society presented themselves. The important connectivity and the significant reduction of travel time attracted commercial activities to the stations and their surroundings, making them a critical factor in the urban property market (see.4.1).

The viaduct space as social-spatial 'rear' sites of the railway space

However, the viaduct reveals how every railway element played its own distinct role in the social-spatial urban life of the industrial city. If the stations were places of public presentation, the viaduct was the infamous 'rear' of the railway station development. The viaduct space, according to this hypothesis, developed from different systems of logic, similarly to the station (the station developed from two different materials and for two different functions, see 2.2.1). In the case of the viaduct, these systems of logic were the development of the transportation network and the specific urban context. However, associated commercial activtities would come into play as follows. Here the 'rear' of the station, in contrast to the orchestrated front, was the space where functions developed related to the new railway operations. These included businesses related to the constant flow of people that, due to their marginalized nature, could not be part of the representative front of the station (see detailed description 4.1.3.2). An analysis of the uses in the viaduct arches outside the station area can confirm this (inside the station the arches were used as the entrance and the waiting hall and were therefore part of the station itself). Here small businesses and workshops operated next to large-scale industry. The arches were used as additional space for the large market halls in the city, as a military riding ring, for the sale of everyday products such as fruit and vegetables and by the businesses (outside of the socio-economic important core-city area) that were forced to relocate due to the construction of the railway line. Artists and artisans also used the arches around *Savignyplatz* for their workshops. Due to conflicts during the construction period the *Stadtbahn*'s route was changed and it was built

where cheap land was available (in working class housing districts in the north of Berlin and in the harbour area around *Humboldthafen*) and not, as once planned, in the prominent neighborhoods in the socio – economic important core area of the city.

From a planning perspective, however, the viaduct was almost certainly intended to be the front of the station. This was changed by diversion of the line as well as by the activities that made use of the arches outside the station area. The phenomenon of the viaduct structure was developed for three different reasons: it was a tried and tested structure suitable to Berlin's sandy ground; Orth describes it as a 'pleasantly organized façade' and thus as a positive contribution to the inner-city; and the third reason is revealed in the planning manuscripts where the intention to generate economic income. Orth's intention to create 'a central railway like a central station' (see 4.1.1) could synthesize the last two arguments. Orth, who had planned the railway through the socially and economically important core area of the city, had focused on the 'station front and square' formula. Based on the high level of access and intra and interconnectivity, the formula foresees the development of prestigious and socially respected commercial and social activities in the station area and an increase in land prices. With the viaduct arches and their attractive facade, Orth had already planned appropriate accommodation for these activities (see 4.1.4).

The change of route led to the relegation of the viaduct to less desirable surroundings. The 'less desirable' commercial activities that took advantage of the arches outside the stations, where the new markets developed, ultimately characterized the viaduct's development. The dynamics of the development are deeply intertwined with the class of the small business owner, the manufacturer and the subculture of the industrial city. Additionally, the process of land expropriation played a role and the way the viaduct space was offered for rent and as compensation. The viaduct arches were offered to allow small businesses and manufacturing to continue operating in the intermediate surroundings of their former location. The uses of the arches introduced a greater spectrum of actors and 'customers' into the transportation space, appropriating the emerging development and building their own identity within the transportation system different and diverse to what the station area could provide.

The development of the *Stadtbahn* transportation space was characterized by competing economic and social interests, as the numerous changes to the route and the conflict ridden construction process testify. During this process, and as early as the planning stage, some actors had more influence than others, which is suggestive of an

'urban hierarchy'. Thus, the question of hierarchical participation of several actors, in the case of the *Stadtbahn*'s early development, was the main anchor of strategic decision-making practices. The government took the decision to develop the project themselves, making full use of the funds and land available. Despite expert criticism, this political positioning lent the project enough strength for it to progress to planning and realization.

This clash of speculative planning interests and the local planning context resulted in spaces such as the station area in which the anticipatory and speculative economic planning interests produced spatially configured 'strategic' developments. In contrast, spaces emerged that developed their social-spatial character through successive development in a development process, as the viaduct and its arches prove. These spaces had nothing in common with the pre-planned concepts that developed with industrialization, such as large streets and street systems, or the boulevard that was intended to be linked with the new *Stadtbahn* stations in Berlin. Developed by the transportation system's line routing struggle during the implementation process, where different urban interests collided, spaces emerged that were mainly shaped by the logic of a successive development led by the way building ground could be purchased.

The result accounts for a transformation process instigated by the destruction of the former Berliner block structure and the process of purchasing individual plots for development. Thus, the viaduct cut through the typical spatial configuration of Hobrecht's '*Berliner Block*', which was divided into an orchestrated public exterior and a private inner area. The viaduct was surrounded by the cheaper and more readily available private inner-block areas and thus, paraphrasing Neumeyer[99], it created a crossover of the private inner and public outer areas of the industrial city. The research on the transportation space shows evidence of the assumed development of particular spatial patterns and specific kinds of space productions as products of the confrontation between different interests. In the process of the first research phase, the viaduct was observed as having produced its own spaces, with the concept of the 'rear' of the station resulting from passing through the walls of Berlin's city blocks.

[99] see Neumeyer (1990), in 2.1 and the historical development of the railway in Berlin

2nd Research Phase: The Stadtbahn space a socially produced space: Transportation network disruption, marginalization in urban practices and commercial activities

In the second research phase (1961 - 1985) the *Stadtbahn*'s spatial configuration is associated with a clear demise of the social-spatial milieu around the railway space in West Berlin. The *Stadtbahn* transportation space lost significantly in terms of transportation demand, social-spatial significance and commercial activities. During the political struggle of the Cold War, the railway was operated in East and West Berlin by the GDR controlled *Reichsbahn*. Because of this paradoxical situation, the *Stadtbahn* system was boycotted in West Berlin by the government and later by a large spectrum of the society (see 4.1).

A closer look reveals the interplay of the divided social space of the city and the *Stadtbahn*. In East Berlin, the suburban railway network remained the key element of public transportation. The *Stadtbahn* network was even extended with a radial network structure towards East Berlin's peripheries. In West Berlin, the network experienced an intensive disruption due to the enforced activities of the GDR in the course of the successive disconnection of West Berlin from the eastern area and surrounding territory. In East Berlin the *Stadtbahn* continued to be associated with urban development as the peripheral mass housing developments in East Berlin show—they were planned around the railway system. New stations like the *Ostbahhof* were developed and old ones revitalized due to their central position in the urban territory (e.g., *Alexanderplatz*).

In contrast, the results in West Berlin show a move away from the *S-Bahn* network. It was partially replaced by new subway lines, which were related to the emerging developments of important urban and commercial areas (e.g *Hansaviertel*, *City West*). Due to the reduced importance of the train system and the boycott, the stations and their surroundings were marginalized in West Berlin (see 4.2.6.1).

According to the viaduct register, several viaduct areas that were highly developed during the *Stadtbahn*'s first development phase showed a more limited usage in the second phase, in both East and West Berlin. However, this second research phase revealed a divergence between the development of the station and the viaduct in East Berlin. The station area was incorporated into the social life of East Berlin and the useless arches clearly were not. The development of the arches declined, which can be associated with the general lack of commercial activities and trades with a socially

supportive basis in East Berlin's urban areas. Although *Mitropa*, the state-run catering company, managed several of the arches, the majority were disused or used as large storage boxes where redundant articles and old artefacts were kept (e.g., military vestiges such as tanks from the Second World War). The viaduct's development and its development patterns, associated with three elements, the transportation network, the specific urban context and associated commercial activties, represent a change towards reduced usage and fewer social-spatially developed spatial configurations.

In West Berlin, the station and viaduct could be associated with similar developments related to the general marginalization of the urban *Stadtbahn* space. The viaduct register showed that the majority of the arches were walled-up. Nevertheless, in industrial areas such as *Tiergarten* single arches remained active for meat wholesale or for small companies (e.g., PALM cigars) and car workshops. The uses in the arches presented a frequent change of renters due to the lack of customers or the move to more 'incorporated' and thus desirable social or commercial areas. The viaduct developments in this research phase in West Berlin were completely removed from any transportation or spatial developments in the rest of the city. Both the network decline, with the subsequent boycott of the *S-Bahn* network, and commercial dynamics, as the currency trade reform of 1948, which brought new trade conditions to the divided city, resulted in a marginalization of the *Stadtbahn* that brought social but also commercial activities in the viaduct arches to a halt.

The contribution that the *Stadtbahn* case can present from the historical perspective to the development of the viaduct and its arches can be expressed as follows: The viaduct developments can be associated as revealed to the three elements, namly the transportation development, urban practices and associated commercial activities. However, the viaduct and its arches have created particular social-spatial expressions in the urban space of the *Stadtbahn*, different and more diverse than those in the station area. In different *Stadtbahn* areas around the viaduct, unplanned processes have interwoven with particular local contexts and developed their own development patterns, which are diverse, different and successive, and contrast with what had originally been intended. This development reveals an incorporation of space into the daily life of diverse individuals with a deep engagement due to their active appropriation (through renting and developing) of the place. Where a single arch or group of arches becomes changed by the action of each individual in a significant way, it leads to a diverse and spontaneous development process of the space. In sum, the individual developments in a viaduct sequence can be conceptualized, due to the

different social–spatial expressions, as a diversity of fragmented pieces. This emerging development pattern can be linked to the critical understanding of spatial development (production) as expressed by Lefebvre and de Certeau. De Certeau explains that urban dwellers create their own places, even if they are not incorporated into the projects' strategic decision-making processes. The development patterns are different to the a-priori determined spatial configurations such as those that a strategic spatial development plan may provide. It reveals spatial patterns that use rules and products that already exist in the culture, and which were developed by a dominant order, in different ways to create their own places. Lefebvre accounts for the process of 'appropriation' as that individual or groups who may present an active and spontaneous process of appropriating space. Here the patterns are not completely determined by the existing rules and their emerging products and settings may be diverse and individual (see Lefebvre and de Certeau 2.2.1.4).

3rd Research Phase: The Stadtbahn space as a socially produced space: Transportation network specialization, urban and commercial activities of 'place-making'

In the third research phase (2000–2009) the *Stadtbahn* transportation space appears in a different development context compared to the historical social-spatial configuration presented in the first and second research phases. A closer look shows the development in terms of transportation and urban development and associated commercial activities. A significant change could be established in the research as a shifting process in the transportation development from a network extension approach to a focus on specific concentrated network service 'hubs'.

No significant associated urban development between the railway space and its urban and commercial development stimuli, as revealed in the previous research phases, can be shown. However, due to urban development measures (e.g., '*Planwerk Innenstadt*') that focused on the inner-city areas, the *Stadtbahn* railway space has remained in areas of emerging redevelopment strategies.[100]

Depending on their position in the network and the expected passenger demand, the stations offer specialized services and commercial activities. During the redevelopment

[100] According to actual development statistics nearly 60% of the *Stadtbahn*'s surrounding areas are in a process of development or earmarked for redevelopment.

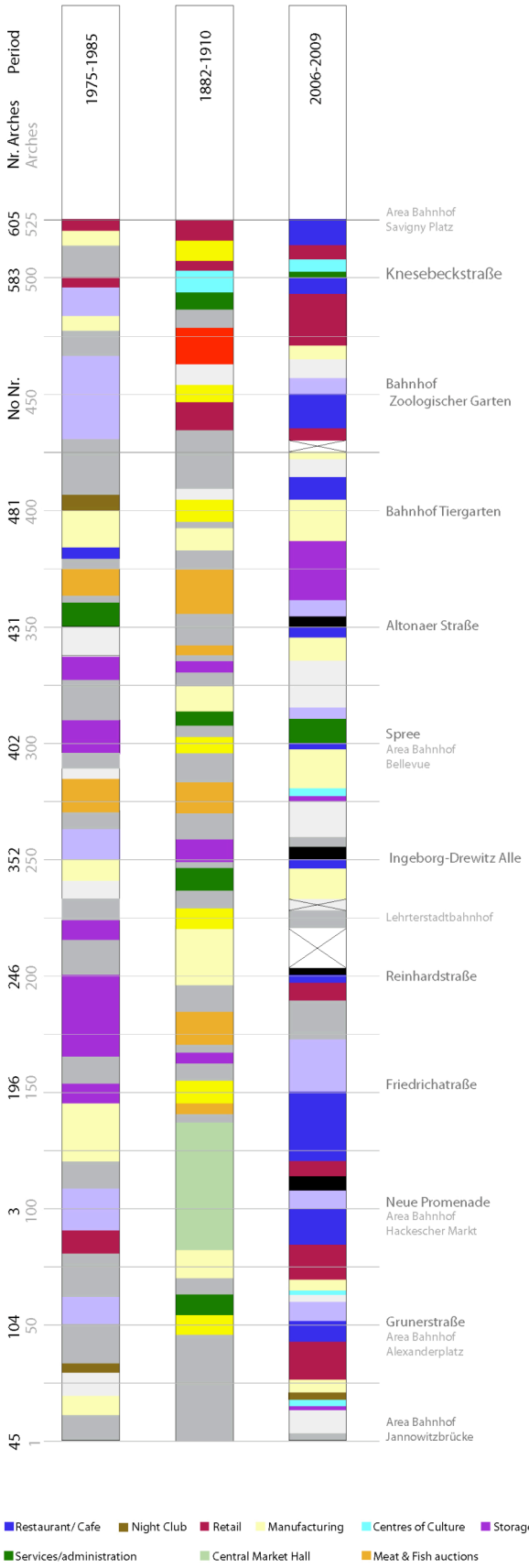
process several viaduct arches were removed to create a new type of station (e.g., *Hauptbahnhof s*ee 4.4.1). The integration of commercial activities in the station shows a move towards a particular form of enclosed space—a shopping mall layout. This configuration, as the research shows, is significantly altering the dialog between the station and station square, which remains a less developed feature. Development approaches that view the station square as a point of interchange between the station and its urban surroundings remain planning proposals or as pending developments.

The railway space configuration of the viaduct and its arches also presented significant changes to the findings of the first and second research phases. Although the viaduct space has maintained its spatial appearance as the 'rear' of the station, pasding through the Berlin block structure and surrounded by fire walls (outside the station), a layer of buffer areas has appeared between the viaduct and the Berlin block structure. This layer contains small manufacturing units, storage as well as temporary recreational uses within and around the arches that strengthen the spatial identity. In general, this research phase saw a significant increase of uses to 50% (see table 4-4 showing changing viaduct uses).

Today, the uses of some arches outside of the station have nothing in common with the new spatial configurations of the station areas. The uses of the viaduct arches shows an interaction on the urban context of the adjacent area. The research on the urban dwellers' identification with the viaduct and its arches reveals that the *Stadtbahn* space outside of the station area is associated with a broad spectrum of identification and with diverse appropriations. The compiled viaduct register the descriptions in 4.3.2 underscores the extension of uses in the infrastructure space through the mixed-use character of the viaduct.

However, during the third research phase an important change in the use of the arches was noticed: between 1985 and 2009 there was a significant increase of nearly 35% in restaurants and cafes, ahead of a 20% increase in retail and 15% in manufacturing. Although this trend is applicable to the viaduct as a whole, the biggest changes were seen in the stations followed in the new emerging inner-city projects such as the *Kranzler Eck (City–West)* (see graphic of uses in the three research phases). The former diverse and individual spatial expressions in the arches, such as manufacturing, retail, workshop and supply functions (e.g., as for market halls in the city (research phase I and II)) have been replaced by restaurants and cafes. In the station's surroundings the arches house large areas of restaurants and cafés. This development

pattern has been strategically promoted by the current renting policy of the DB Station & Service management (see 4.4.4.1). In the new inner-city project the viaduct with its arches emerges as an orchestrated urban stage set replete with refurbished restaurants and cafes.



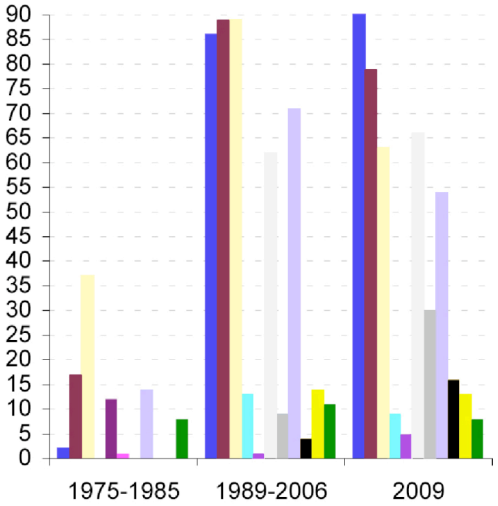


Table 4-4 Table showing changes of uses in the arches in the three different research phase.

The following insights can be drawn from the third research phase regarding the current development of the *Stadtbahn* space and the development of the viaduct and its arches (see table 4-5):

- Firstly, the railway management has moved away from a network extension approach towards specific train space development. The focus on specialized train network configuration and stations is based on a strategically designed demand for service and consumption.

- Secondly, the diverse and individual social-spatial viaduct space configurations (outside of the station area) are shifting towards a uniform development in urban projects. With the general trend towards orchestrating spaces in line with economic interest, the viaduct steps out from its previous diverse social-spatial configurations with its own development patterns.

From the revealed shifting parameters in the emerging Stadtbahn development process it can be further confirmed that development patterns are emerging in the viaduct associated with the transportation network, the specific urban context and associated commercial activties. Thus, the economic focus of both the transportation management and urban development strategies are changing the specific development process of the viaduct, which had provided diverse and individual social-spatial expressions, towards the dynamics of 'place-making' strategies.

The questions that arise in this context are: what kind of spatial qualities does the single viaduct parts have in view of the shifting development? Are conflicts emerging in terms of development proposals and 'appropriation' between urban strategies and the particular social-spatial configurations? And, how is this process related with the three elements that have been shown to shape the development of the viaduct?

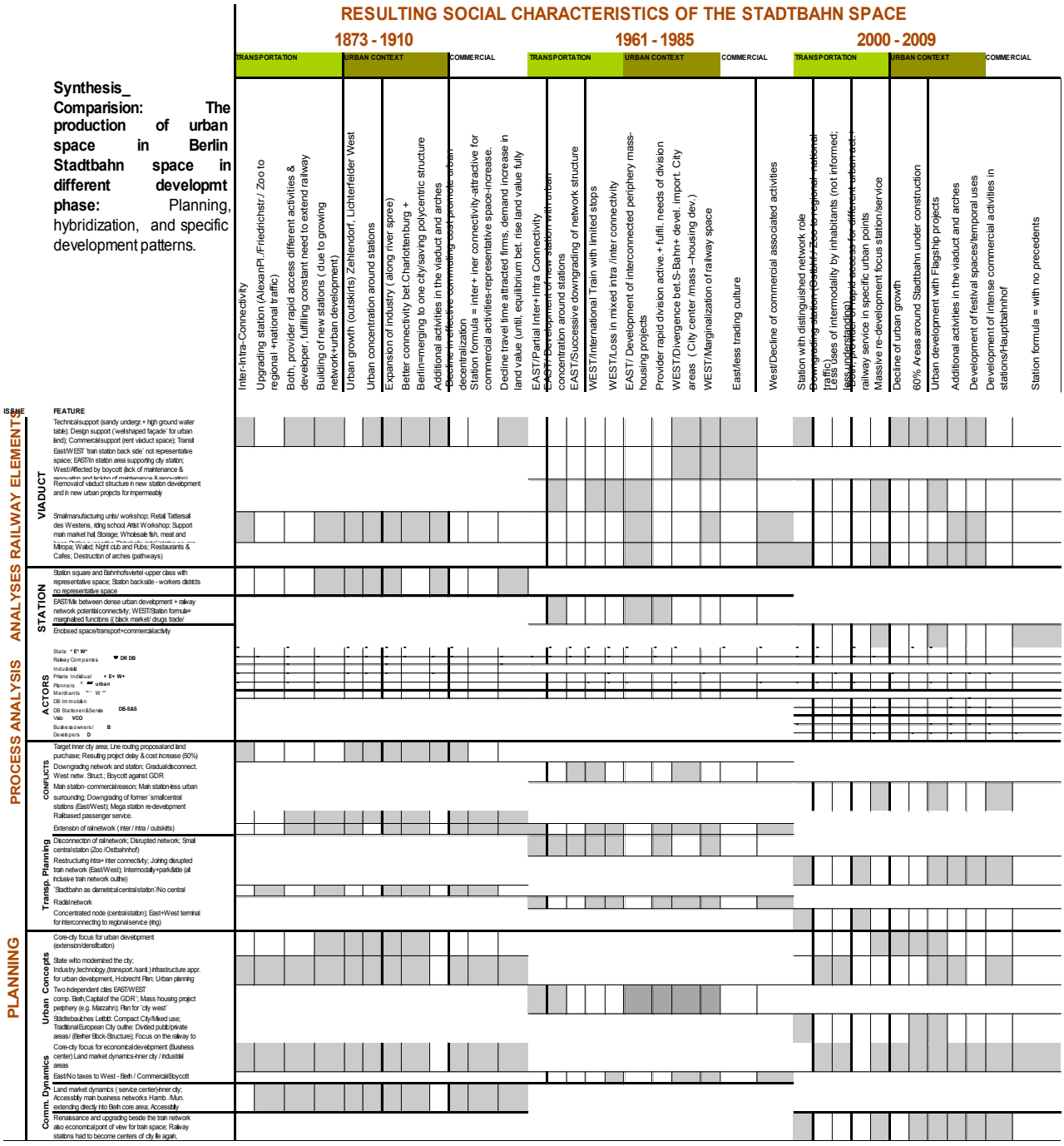


Table 4-5 Synthesis Table, summerizing the three research phase.

Towards the in–depth micro research on the viaduct's emerging development and urban potentials

The following chapter will discuss the development of the current *Stadtbahn* space at a micro level. The aim is to study alternative viaduct developments as well as the scenarios of social conflicts and the role the viaduct and its arches play in these processes. A specific objective is to reveal the viaduct and arches spatial potentials,

transformation mechanisms and successive changes. Based on Lefebvre, spatial expressions can be categorized as '*dominant space*' or 'appropriated' space. The former is by nature dominated by technological intention and politic-economical power and is inherently mono-functional and enclosed; the later is diverse and 'appropiated' to the everyday users' needs (see 2.3). Three case studies have been chosen that reveal the existing diversity in terms of social-spatial expressions, associated to the interplay of the three elements (transportation, urban development and associated commercial activities). The cases are:

Case 1) Partial viaduct structure and the 'flagship' development of the *Hauptbahnhof* area.The area reveals a specific expression of dense, 'integrated' transportation and consumption strategies separated from its urban surroundings.

Case 2) *Multiple uses* in the arches and a dense urban area in *Savignyplatz*. The dense inner city area reveals frictions in the understanding of the socio-economic development of the space that has emerged between the arches and the urban block structure.

Case 3) Temporal and mixed uses in the arches and development of the Jannowitzbrücke area. The third area of examination stands amidst the conflictive development between private interest and creative entrepreneurship. Along the viaduct, specific patterns of outdoor activities, temporary galleries and alternative cultural uses are emerging in the immediate vicinity of the River Spree.

5 SOCIAL–SPATIAL DEVELOPMENTS OF THE VIADUCT ARCHES: BETWEEN 'APPROPRIATION' AND 'PLACE-MAKING'

This chapter investigates the interplay between transportation, urban and commercial development, as specified in the Synthesis of Chapter 4, of three specific sections of the Stadtbahn line—the areas surrounding Hauptbahnhof, Savignyplatz and Jannowitzbrücke. The findings are based mainly on information gathered from field research (first section) and complemented by scholars' dialog, workshops and qualitative stakeholder interviews (second section). In the first section, research was conducted using the *Aktionsraumforschung* methods (see Chapter 3). Firstly, a *Social Area Analysis* was conducted, which included zoning and mapping the transportation development, physical space and commercial activities. Secondly, the research on the *routes of urban dwellers* was followed up with the counting methods and questionnaires. Thirdly, the research on the *perception of urban dwellers* was enhanced with qualitative interviews and questionnaires based on photographs.[101]

[101] The counting method was designed to count the people coming out of the station to show whether they would leave of stay in the area and which side of the viaduct was preference given to display activities in the area. Data was gathered during four different time periods (twice on weekdays, twice on the weekends) at three defined times of day (mornings from 8-10, afternoons from 4-6 and evenings from 8-9) over three weeks. Each field trip included 30 questioners and research with pictures introduced after the counting method. See for detailed outline on the research Annex , Alfaro d'Alencon (2009)

5.1 Case 1: Partial viaduct structure and the 'flagship' development of the Hauptbahnhof area

The urban surroundings of the transportation system's main 'hub' the Berlin *Hauptbahnhof* (i.e. Berlin main station) is the first case study analyzed in this section.

The area of the *Hauptbahnhof* was developed in a geographically central position in Berlin's urban landscape. However, during the period of division, this land had been very close to the Berlin Wall and therefore, after the reunification of Berlin, it was comparably sparsely populated and underdeveloped. From their earliest planning stages, urban development strategies such as the *Planwerk Innenstadt* intended to revitalize this area with a new urban development incorporating a central station as a magnet—a flagship project. The planned strategy was designed to meet the expected increased demand for transportation integration for Berlin by providing intermodality in a concentrated network hub on the site of the renovated *Lehrter Bahnhof*. From the urban development perspective the planning foresaw the 'proper' integration of the increased flows of mobility in the city area, thereby 'creating' urban space of higher quality.

In the urban renewal plans for the government area in 1992 (based on the *Wettbewerb Spreebogen* competition) around the River Spree, the *Spreebogen* (i.e. Spree curve) the *Lehrter Stadtquartier*, named after the old station that was replaced with the new hub, the area had already been designated for redevelopment. The *Spreebogen* plan developed by the Senate for Urban Development in Berlin attempted to extend the historical area of Berlin through the *Tiergarten* with new capital city functions. The plan foresaw the creation of large areas of contiguous building land in the inner city area as well as the extension of the governmental building complex towards the *Lehrter Stadtquartier*.[102] With Schultes and Frank Architects' winning entry for the *Spreebogen* competition a new linear design was developed—the *Band des Bundes*. The urban design proposal incorporated all governmental activities into an urban and—planners thought—open building unit, connecting the functions of the area towards the south side of the *Lehrter Stadtquartier* over the River Spree. Hence, Schultes and Frank's 1993 planning proposal assumed that the *Lehrter Stadtquartier* would develop as a dense, compact neighbourhood district, followed by the high-volume of a new railway

[102] see competition outline in Senatsverwaltung für Stadtentwicklung und Umweltschutz (1992), p.35-44

station, and defined as the new *Lehrter Stadtquartier*. In line with these projections for the area, the 1994 urban design competition won by the architect Ungers included two new station squares—the north square *Europaplatz* and the south square *Washingtonplatz*—around the new train station development designed by the Hamburg planners Gerkan, Marg and Partners (GMP) who had won the *Hauptbahnhof* competition in 1992.[103] These station squares were intended to form the basis for the urban development plan for the station's surroundings. The next two decades have witnessed additional planning in the area, such as the landscape design for the area around the *Bund des Bundes* by Wehberg and Müller (still under construction) and the area around the new *Tiergarten* Tunnel, finished in 2004. Landscape designers Weber and Saurer finished the landscaping of the River Spree in the area around the *Hauptbahnhof* building site in 2003. This design for the riverbank provided one of the first walkways along the Spree.

In 2006 the *Hauptbahnhof* station was finished and opened. The construction and design of the building relate to the traditional *Bahnhofsbau* (i.e. station construction) with a visible steel structure. Large openings in the floor of the station allow natural light to reach the lowest platform level. After a financial agreement between the federal government and the Deutsche *Bahn AG* regarding the *Hauptbahnhof* project and the project section covering *Perleberger Strasse* and the *Spreebogen* was reached in 1995, the station's first building period began in 1997. The building costs were estimated at 700 million Euros, of which half a million were to be covered by the state.[104] The construction took place in several steps, beginning in 1989 with the construction of the *Tiergarten* tunnel, the north-south connection of the station and the underground crossing.[105] The central station *Hauptbahnhof* was built on the site of the former *Lehrter Bahnhof* station, a small station with a very different traffic concept in terms of dimensions and conceptual outline. *Deutsche Bahn AG* commissioned *Tishmann Speyer Properties Deutschland* GmbH to carry out the construction work.

---

[103] von Gerkan, Marg and Partners (GMP) architects that also contributed to the general strategy for the restructuring of the stations in Germany in the Projekte 21 (4.3.3) and co-authored the book Renaissance der Bahnhöfe (1997),p.253

[104] The Hauptbahnhof represents the largest private construction project in Germany since the end of the Second World War. Siebert, Chairman of the board at DB Stationen&Service AG (2007) in Newspaper: Tagesspiegel (13th. January 2007)

[105] Parts of the roof were not completed as had been agreed by the architects and the competition jury, which led to tension and court cases.

The foundation excavation for the *Hauptbahnhof* covers an area of around 90,000 square meters and is 15 to 18 meters deep.

However, the area around the *Hauptbahnhof* is currently still under construction and has a density of 9005 residents per square meter (22% housing / 17% industry / 4% parks). [106] The building density is expected to increase substantially with 200,000 square meters of hotel, retail, residential and office space planned.[107] As part of these new proposals, new office buildings are planned for the south and west part of the *Hauptbahnhof* and are related to the station's two squares. During the redevelopment of the railway space for a new *Hauptbahnhof*, the viaduct structure was removed, so there is no particular interplay between the station and the viaduct. However, several meters to the west and east, the viaduct is connected to the transportation infrastructure again but arches remain walled-up.

In spite of all these plans and investments, the area cannot be described as a place of diverse activities. Besides the station activity, single use areas, such as recreational pathways and temporary outdoor activities, dominate the river bank of the Spree. The data evaluation and the *Hauptbahnhof* survey show that the station and the urban area were designed as independent 'self-sufficient' elements, meant to fulfil the specific functions of the station.

5.1.1 The research on *Hauptbahnhof*'s emerging urban space in terms of transportation performance, urban context and associated commercial activities

1. Social Area Analysis

Transportation performance

Hauptbahnhof opened in 2006 and is one of the newest stations in the Stadtbahn network. The station was built after the competition that foresaw the development of the station as a '*Turmbahnhof*' (i.e. tower station)—a layered station which functions as an interconnecting station.

---

[106] Hauptstadt Berlin, 15 Years of Development Measures, Senatsverwaltung für Stadtentwicklung , 2007

[107] Neumann (2006) in: Berliner Zeitung (31. Mai 2006)

- **Transportation layout**: The *Hauptbahnhof*'s traffic volume and design as an interconnecting hub represent the new approach—a shift towards a central system network design and the concentration of passengers at a specific point in the system.

- **Transportation organization**: The station building consists of five levels. Train traffic is organized within the upper and the lower level. The three levels in between are for commercial use. The top level for east–west traffic is built on a bridge structure and has six east-west rail tracks. Platforms interconnecting with the subway are on the underground level. The lower transportation level for north-south traffic consists of four platforms and tracks pass under the Reichstag in the so-called *Tiergarten* tunnel. There are additional tracks for the subway as well as a road tunnel. Connections are arranged like a chariot wheel with all the incoming lines arranged along spokes to the central hub. The intention is to create a designated deployment in the transportation network through a strategic node planned to collect the bulk of network passengers.

- **Network structure**: In the 'hub' two of the six upper level east-west rail tracks are used to cater for the *Stadtbahn* trains travelling through Berlin, while the remaining four tracks are used for the regional, national and international trains and the airport express services. The north-south tracks in the lower level are designated for long-distance and regional train traffic, as well as for the subway line U55, which opened in August 2009. To the north, the tracks head to the *S-Bahn* ring and then branch out to the west and northeast. In the northeast of Berlin, access is granted via the new train station *Gesundbrunnen*. To the west, the trains run to *Jungfernheide* and S*pandau*. Heading south, the rails under the River Spree lead to the new regional station *Potsdamer Platz* and the new south 'hub' *Südkreuz*.

- **Concentration of flows**: The station is used by *InterCityExpress*, *InterCity*, *RegionalExpress, RegionalBahn* and *S-Bahn* trains and the new U55 line (Chancellor's subway). As a 'hub', the *Hauptbahnho*f was designed to deal with up to 1800 trains per day (225 long distance trains, 325 regional trains

and 627 short distance *S-Bahn* trains).[108] The station is also a stopping point for several international trains from cities as distant as Novosibirsk in Russia and Astana in Kazakhstan. Since August 2009, the tracks on the upper level lead east over the *Ostbahnhof*. In the western direction the tracks head to the station *Charlottenburg*, and then either to *Spandau* station to the west or via *Wannsee* station to *Potsdam Hauptbahnhof* in the southwest.

Intermodality is provided by the bus services and pedestrians arrive at level zero—an intermediate level between the station's two transportation levels. Several bus lines in the areas surrounding the station's squares provide varying degrees of interconnectivity. The north entrance facing the *Europaplatz* and the *Moabit* neighborhood provides the connection to three bus stops on both sides of *Invalidenstrasse* and offers parking spaces close to the station. The bus stops (serving 12 bus lines) provide transportation in both the east-west and north-south direction to central areas of Berlin, but also for farther destinations and *Tegel* airport with the TXL-Bus. The south entrance facing the *Washingtonplatz* and the government area across the Spree provides fewer bus stops (only the TXL airport bus and one other bus line), but a concentration of taxis. *Hauptbahnhof* does not yet have a connection with the Berlin Tram network. It does however offer a range of parking possibilities, Park & Ride and 900 parking spaces—a three-storey car park accessed from two entrances outside the station and street parking in both square areas. Neither travellers nor locals frequently use *Park & Ride*: during the intense two-week research phase the parking provision was 60% to 70% empty. Additionally, a DB Car Sharing office in the station provides alternatives to car rental. The U55 is a short underground line to *Unter den Linden*, which is not yet connected to the broader subway network. Building work was scheduled to start in 2010.[109] With the *Hauptbahnhof*'s transportation provision as a concentrated 'hub', the Deutsche *Bahn AG* aimed at reducing travel times of national connections

[108] The daily number of passengers is estimated at 350000 persons/day. Data from the DB, Stationen & Service in July 2009

[109] Data from the DB, Stationen & Service in July 2009

by 9% to 38% and of regional connections by 17% to 41 %.[110] However, the downgrading of former main stations to regional stations (*Zoologischer Garten* / *Ostbahnhof*) resulted in a longer travel time for 65% of all Berliners, mostly those living in the areas of the former City West.[111] The timesaving forecast by Deutsche Bahn AG was based on an expected increase in households around the central station. As yet, this has not materialized.

- **The physical space**: The area of the *Hauptbahnhof* could be described as a large underdeveloped area with individual buildings under construction. It is surrounded by the government area, the former Humboldt harbor and is articulated only to a limited degree in an urban sense by the outdoor activities around the Spree. There are residential areas in the area north-west of the station (*Tiergarten, Moabit* and parts of *Wedding*) and in *Mitte* to the east. The station incorporates two station squares (south *Washingtonplatz*, north *Europaplatz*), which are surrounded by major streets dividing the two squares from these surrounding areas. The huge dimensions of the station mark the middle point of the spatial configuration as a major traffic node. A large amount of the existing viaduct arches in distance to the station are walled-up and flanked by a parallel street.

- **The inner area of the station**: The inner area of the station forms a point of high activity and density in the area. The station squares remain empty and less developed points of interchange.

Commercial activities in the areas of the Hauptbahnhof station

- **Area *Hauptbahnhof* station**: The area outside the station shows large-scale mono-functional areas for government activities, a new riverbank along the River Spree with outdoor activities such as *Strandbars* (beach bars), pathways and sports activities as well as business activities in the immediate surroundings. During summertime events, temporary tent structures house gastronomic services for visitors.

---

[110] see for more details http://www.hbf??berlin.de/site/berlin__hauptbahnhof/en/start.html

[111] see Ahlfeld presentation at the Technical University of Berlin, Workshop, " Railways, Real Estate & The re- making of cities in the 21st Century" Rail development mega-projects in Europe& beyond, October 16th and 17th 2009)

- **The station inner area**: The new station building itself is a major piece of commercial real estate. It offers 15,000 m² of retail floor space over three floors, housing about 80 stores including women's and men's fashion, catering, food, gifts, health / wellness. The retail spaces were rented out long before the station building was completed. The shops are open from Monday to Sunday from 8:00 to 22:00, and the station pharmacy is open around the clock. DB is present with two travel centres, a lounge and a *DB Carsharing* office, among other things. The shops are located on three levels between the main transportation platforms. The retail areas close to the upper transportation level mainly include shops such as bakeries, coffee to go and fast food. The lowest shopping level has a shopping mall layout and includes clothing stores, drugstores and newsagents. In the entrance area, the shopping areas are oriented towards the inside of the station with a small number of shops providing openings to the outside. Therefore, the space has a commercial configuration comparable to a shopping mall layout—it is separated from the outside of the station. The shops are estimated to be used by nearly half of the passengers using the station, a figure approaching around 200,000 persons per day.[112] The two buildings that span the station offer approximately 44,000 m² of office space. Tenants for the two buildings have not yet been found. The DB has announced on its website that it will move its headquarters into one of the two towers. For some time, the DB Group has pursued a strategy of relocating to its own real estate and thereby reinforcing additional activities in the train stations. Of the 800 people working in the station, 375 of them are employees of the DB, namely 150 of the DB Station & Service, 70 of the DB distribution, 75 for DB Services, and 80 of DB Security services.

*2. **The routes of urban dwellers and the Hauptbahnhof***

This section will give an overview of how urban dwellers use the surroundings and *Hauptbahnhof* station. Special emphasis, as explained at the beginning of the chapter, was put on discovering whether respondents belonged to the neighborhood or were travelers. Furthermore, questions were asked about how they use the area and

[112] Information obtained in interview with DB Station& Service in 2009

particularly if they use the station as a point of interchange or as a final destination. At the beginning of the survey, due to the high amount of people inside the station, characteristics were difficult to establish. Therefore, the survey conducted in April 2009, with the counting method and the support of the students, had to be strategically designed in order to reflect the places of entrance to the station and also the specific locations in the diverse layers of the station itself. With the counting method survey and questionnaires, several particularities could be established on uses and times typically characterizing the activities in the area. The age of the respondents ranged from 18 to 60. The predominant group was aged between 38 and 45 years (49% of all interviewed). In this group, most of the respondents were employees (mostly commuters), while a second group consisted of tourists, unemployed and pensioners (52% commuters, 30% tourists, 12% unemployed, 6% pensioners). One fifth of the respondents were local residents and the rest were travelers. (However, this combination depended on the day of the week, weekdays compared to Sunday)

The questions asked were:

1. What are you doing in here?
2. How did you reach this place?
3. Do you live in the surroundings, where do you live?
4. How often do you use this place?
5. Question about age and profession

A first characteristic is the difference in activities and length of time spent in the surroundings and the station depending on the day of the week. Sundays in particular show a significant change in use patterns. A second characteristic was identified: more people enter the station than leave the station. While the station square remained a frequented space, the walled-up viaduct area shows no significant movement of people. However, during the summer of 2008 before the survey was made, several tents in front of the viaducts at the *Pressestrand* hosted outdoor festival activities. (On weekdays 38% stayed in the station, of them inhabitants 9%/ Berlin locals 15%/ tourists 25%/ travelers 23%; On Sunday 68% stayed in the station, of them inhabitants 15%/ locals 49%/ tourists 25% / travelers 21%).

- **Uses in the area by city dwellers**: The research on uses in the area showed that the density in the station was higher at the weekends than during the week and people also remained longer in the station at the weekends. The interviews suggested that these differences were due to following reasons. The first reason was that people entered the station during weekends with the specific intention of shopping, especially on Sundays, when main shopping malls in the city are closed, due to labor regulations limiting the operation times of shops. The second reason was that more long distance trains stop in the station at the weekend and people remained in the station, waiting for connecting trains (as stated by 43% of the 120 respondents in the station on Sunday). With the prevalent tendency among passengers to stay in the station, the interview also included a question about whether the respondents used the station as a final destination or as an intermediate stop. The general response was that people use the station as a point of interchange, while people leaving the station were commonly tourists, of whom some were Berliners on sightseeing tours, and a minority were residents of the area. These people left the station square quickly and the viaduct area was not a place to visit. The changed personality of the station during the weekdays compared to weekends was also reflected in the parking lot occupancy. In general, the survey indicates that parking areas are relatively empty (only 24% of the parking spaces in the three-level car park were occupied on weekdays--of the 860 parking spaces, 214 were occupied.

- The weekend showed only a slight increase in parked cars from 24% to 28%). The survey on people shopping showed that people who came to the station to shop generally arrived by car. The data obtained from the counting method at the station's entrances provided impulse for further research—one issue was the different amount of people entering and leaving the station during the weekdays compared to the weekends. On the weekdays the station entrance on the north side, close to the residential area and equipped with more bus stops, was more frequented by passengers (at the survey time from 8.35 – 8.50, 203 passengers entered or left the station on the north side and 146 on the south side). This figure changed at the weekends, to more people entering or leaving the station via the south entrance close to the *Tiergarten* and *Unter den Linden* (at the survey time from 15:20 – 15.35, 269 entered or left the station on the north side and 379

on the south side). The interviews suggest that the reason for people entering the station from the south side at the weekend was that they were either coming from tours from the promenade along the river Spree or had parked their car in front of the station for shopping in the station. On weekdays, people from the neighborhood of *Moabit* came to use the station for the purpose of shopping. The graphic on the next page shows the entrance and exit situation in the station on Thursday and Sunday.

- **Patterns of microcirculation:** microcirculations can be established by examining the movement patterns of the people remaining in the area—the main preferred area is the inside of the station. In the inner area, people tend to firstly remain in the shopping areas and secondly on the platforms, waiting for the trains. However, the shopping area remains the place for people to go and pass time.

Figure 5-1 Uses of the station by people entering and leaving the station on different days (Sources: Alfaro d´Alençon 2009)

Differences in the intensity of people entering the station could be found. From the survey, Sunday showed a change in the use of the station because people remained in the station for shopping. The red colour identifies the people entering or leaving the station on foot. The black colour indicates people arriving at the station with individual cars or other public transportation. The green number shows the people arriving from the bus stop.

3. The perception of urban dwellers

The knowledge obtained from the previous section helped to develop the research on urban dwellers' perception of the station. The survey was conducted on a Thursday and a Sunday. The survey needed to be prepared differently for those days. Due to the more empty station, Thursday was expected to be a better day to ask more people about their perceptions of the area and the station. The first problem was that outside the station only a small amount (1% of the people) could be met and people tended to rush by. As a result, the area outside of the station was not used in the survey. The second problem of the survey was to question people about their perceptions and the particularities of the area's image with a set of prepared pictures (the next case study in the area of the *Savignyplatz* presents this fully). Photographs were used to engage people into a conversation about their personal engagement with the area and how this was combined with their daily routine. After several unsuccessful attempts to engage people in this fashion, this section of the research was abandoned. The passers-by, fully laden with either luggage or shopping bags, were not willing to answer questions and the anonymity provided by the crowds further helped them avoid contact with the researchers.

Therefore, without the pictures the survey asked the following questions:

1) What is identified as a landmark for the people in the area and how do the stations or arches contribute to the image of the area?

    - **Interviews results:** In the afternoon hours on Thursdays the station area (inner space of the station) was less densely occupied with people and the majority confirmed they use the station for interchange and for the purpose of long distance travel. The respondents, concerned with their ongoing travel plans, were often preoccupied with train schedules and trying to orient themselves within the station and unwilling to take part in an interview.[113] However, some people had time to answer questions on their perception of the area. The majority simply stated that their reason for visiting *Hauptbahnhof* was travel. Others, and these were the people who had arrived in the station for tourism reasons, were interested in the architectural

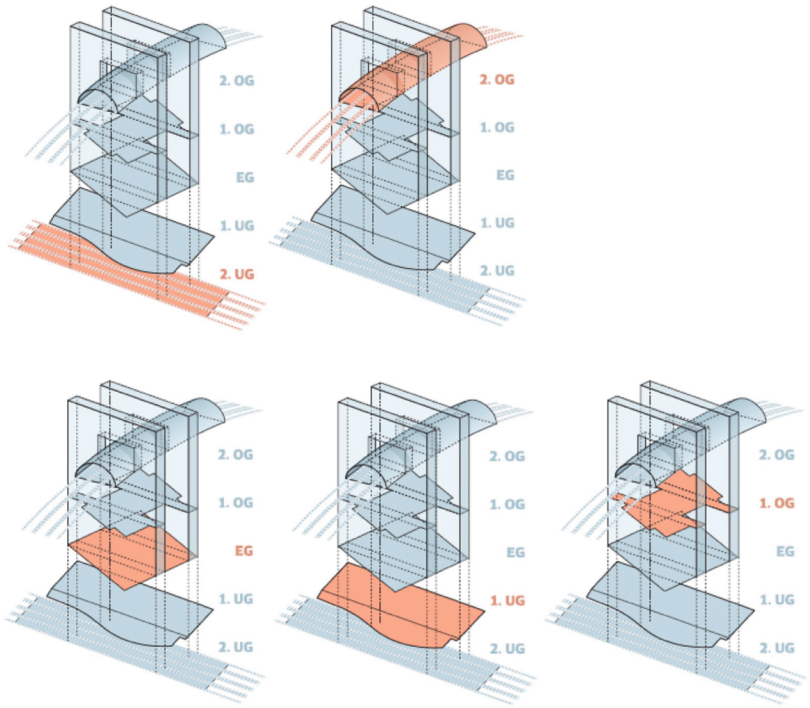
[113] This may not represent a representative sample, since only people could asked who had time.

details of the station. They had heard and read about the novelty of the station and had come to take photographs before moving on to another tourist spot in the surroundings. Berliners stressed their concern about the poor orientation references in the station. An older lady told the interviewers that she oriented herself by identifying the shops: she would find the right exit by following an Asian food store. She was not alone in using shops and signs to find orientation within the station–the crowded spaces make orientation difficult and the signs are inadequate. Others underlined that the building's interior was symmetrical, making orientation difficult. This was exacerbated by the similar views the windows provide to both sides of the station.

- The Sunday survey provided a new picture for researching people's perception of the station. Despite the more crowded space, people showed more enthusiasm than on Thursday to answer questions. The majority of respondents had come to see shops in the station with better offers than in other parts of the city. People showed great acceptance of the possibility of shopping on Sunday, which for many people remains the day in the week for leisure activities. The respondents preferred to discuss shopping details than transportation and stressed that the selection of shops is very limited in terms of comparing prices and quality. After hearing a lot about shopping, the researchers moved to the upper levels of the station where the transportation actually takes place. Here people waiting for the trains commented on the light, open and friendly space of the station and stressed that on the upper level, having left the station's crowded retail levels, they enjoyed seeing the urban surroundings from an elevated position. Most of the people asked questions about the development of the area showing knowledge on the building development and especially on how the *Band des Bundes* had been developed. They remained curious about the further development of the area. Tourists going back home were enthusiastic about the outdoor activities in Berlin. They had experienced the beach bars during the summer and the Berliners shared knowledge about the new riverbank development of the Spree and the possibilities to walk along the river all the way to *Friedrichstrasse.* After this experience in the upper level, the tactic for this survey was to change location and continue research outside. However, the previous surveys had shown that the station square was less densely peopled than the inside of the station. This again proved to be the

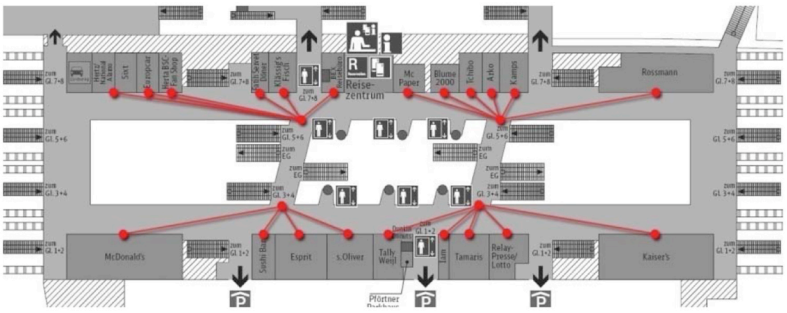
case: the squares were nearly empty and people coming out of the station abandoned the space to either interconnect with other means of public transportation or take a taxi. Several tourists remained to take pictures. The single pieces of the viaduct structure remain unnoticed. They did not visit them and the arches are still walled-up.

Space of Business



There are five floors in the Hbf:
Two of them are for the **Traffic Place**:
- the Upper Floor
- the Lower Floor

Accesibility of Business



Beauty and Wellness
- Chemist
- Douglas
- Krass Optik
- The Body Shop
- Hairstylist

Fashion & Accessories
- Gerry Weber
- Görtz 17
- Iam Accessories
- Look 54
- s. Oliver
- SIX Modeschmuck
- Tally Weijl
- Tamaris
- Tom Tailor
- Vero Moda
- Jack & Jones

Daily Use
- Kaiser´s Supermarket
- Rossmann Drugstore

Eating at the Railway Station
- Asia Gourmet
- Dunkin´Donuts
- Eiscafe Zanetti
- Fatih Servet Döner
- Hopfingerbräu
- McDonald´s
- Staft Bar
- Sagafredo Coffee Shop
- Starbucks Coffee
- Bäckerei Kamps

Gifts
- Montblanc
- Bärlin Souvenirs
- Thestha BSC fan shop

Telecommunications
- O2
- Mobilcom

Travel
- BEX Reisebüro
- DB Carsharing
- Sixt

Figure 5-2 Transportation and commercial development in the station Hauptbahnhof (Sources: Alfaro d´Alençon 2009)

5.1.2 A space of varying urban interests: The dominant space for transportation and commercial activities

Qualitative interviews with the *DB Station & Service, Vivico* and renters of the arches form the basis of this section. Another source was scholar's dialog on the topic of urban development in the space of the *Stadtbahn*, revealed in workshops organized by the author at the Technical University in Berlin, between 2007 and 2010.

The frame of conflict in the case of the *Hauptbahnhof* area is not really a locally based one. This is due to the fact that firstly the station, the two stations squares and the southern surrounding area are situated in relatively low density urban surroundings where the stakeholders and urban dwellers were relatively unaffected by the development. The lack of stakeholders is also due to one group of stakeholders distributing the area through different subsidiaries of the *Deutsche Bahn AG*, which owns most of the area. The station and its commercial activities and station squares are owned by DB Station & Service, while the surrounding areas such as the *Lehrter Stadtquartier* and *Lehrter Strasse* area are owned by *Vivico*.

Secondly, most of the areas are under construction, or on 'stand by'. However, the implementation of planning proposals and the realization of several competitions, such as those for the station squares and the surrounding areas, are running way behind schedule. The *Hauptbahnhof* area was forecast to be fully developed by summer 2006. So far, the road concepts that connect the *Invalidenstrasse* in *Alt-Moabit* and the *Humbolt Friedrich List Ufer* at the *Humbolt Port* have been realized in the southwest area. Ungers' urban planning proposal foresees a group of solitaire buildings in the western area of the *Lehrter Stadtquartier*—two to the south of the station and five to the west of the station. Among these buildings, the proposal additionally foresees the development of two high-rise buildings in the northern square at the *Europaplatz*. The planning outline of the station square to the south includes a square designed by landscape designers Schwatz/Kiefer, adapted to the city grid and facing the Spree. These developments have fallen behind original schedules and the development of the office and residential buildings in the station's surroundings are now uncertain.[114] New

[114] see http://www1.bpb.de/publikationen/LFSBBX,2,0,Die_Parlaments_und_Regierungsbauten_des_Bundes_im_Kontext_der_Berliner_Stadtentwicklung.html (July 7th 2009)

plans foresee the completion of the station squares by 2015.[115] Still at the beginning of 2010 a new competition was launched by *Vivico* for the *Lehrter Stadtquartier* and the *Lehrter Strasse*, which would render the existing proposals redundant. The new plans comprise the building of separate buildings with ca. 20,000 sq.m., including office space hotel, retail, art areas and 900 parking spaces. The plans for *Moabit Ost* are currently supported by the neighborhood management (QM) and the first phase foresees the project addressing areas for education, health, living environment and local economic development.

The still existing and overhauled master plans represent a complex urban planning process undertaken in spite of the already realized infrastructure development of the station. These complex conditions make a completion date for the project difficult to calculate.

However, the urban redevelopment around the *Hauptbahnhof* area was originally assumed to happen 'automatically' after the development of the station by the Deutsche Bahn.[116] The station was expected to attract urban development, counting on past patterns of urban development around the stations, as also seen in the case of the *Stadbahn* stations (See 4.1). The important connectivity and the significant reduction of travel time traditionally attracted commercial activities to the stations and their surroundings, making them a critical factor in the urban property market (See 2.2.3). In contrast, as researched by scholars (Ahlfeld, Wendland 2009) the post-unification development of the Stadtbahn realignment in the case of the *Hauptbahnhof* has had little impact on real estate markets (see 4.3.2).[117] Today, since employees are now virtually and digitally connected to their workplace, they do not necessarily have to organize themselves around direct access to the transportation area.

---

[115] Bodenschatz presentation during the workshop at the Technical University of Berlin, 12th-20th March 2010. International Planning Studio, Trains, Stations and Urban Development, The Case of Berlin and the 'Hauptbahnhof'. Instructors: Alfaro d'Alençon/Novy/Peters/Pizzaro/ Rojas

[116] Interview Vivico, March 2010, Interviews with DB Station&Service during 2009

[117] see Ahlfeld presentation at the Technical University of Berlin, Workshop, " Railways, Real Estate & The re- making of cities in the 21st Century" Rail development mega-projects in Europe& beyond, October 16th and 17th 2009

However today, three years after its opening, the finished station is like a 'glass palace in the desert'[118]. The majority of surrounding areas are still awaiting redevelopment. The reasons for its appearance can be related to the recent low in Berlin's real estate market, and its lack of urban economic and population growth. However, the abundance of alternative centrally located land with better conditions also comes into play. Development sites with better connectivity of the stations and their surroundings as found in urban developments around *Mitte* districts (*Friedrichstrasse* station) are more appealing. Therefore, *Vivico* is realizing a market-oriented 'hold' position for the development of the areas especially to the west of the station, such as *Lehrter Stadtquartier*, due to the relatively unprofitable outcome that the development or sale of the land would currently present. This position is in conflict with the intended 'automatic' development, because the owner*, Vivico*, is waiting for the best (most profitable) moment to sell or develop the area The owner's do not consider opening up the area with short-term rent contracts to less profitable temporary uses . The question arises how to financially support the cost of the train infrastructure development. Here, ironically, the *Deutsche Bahn* and *Vivico* could become direct competitors, for example when both organizations simultaneously attempt to find suitable investors for the areas around the station.[119] The remaining walled-up viaduct arches are currently not a subject of redevelopment. Additional uses and activities in the station's surroundings have been partially developed with temporary tent structures running parallel to the arches during outdoor festivals.

[118] see Peters, Alfaro d'Alençon forthcoming

[119] see Peters, Alfaro d´Alençon forthcoming

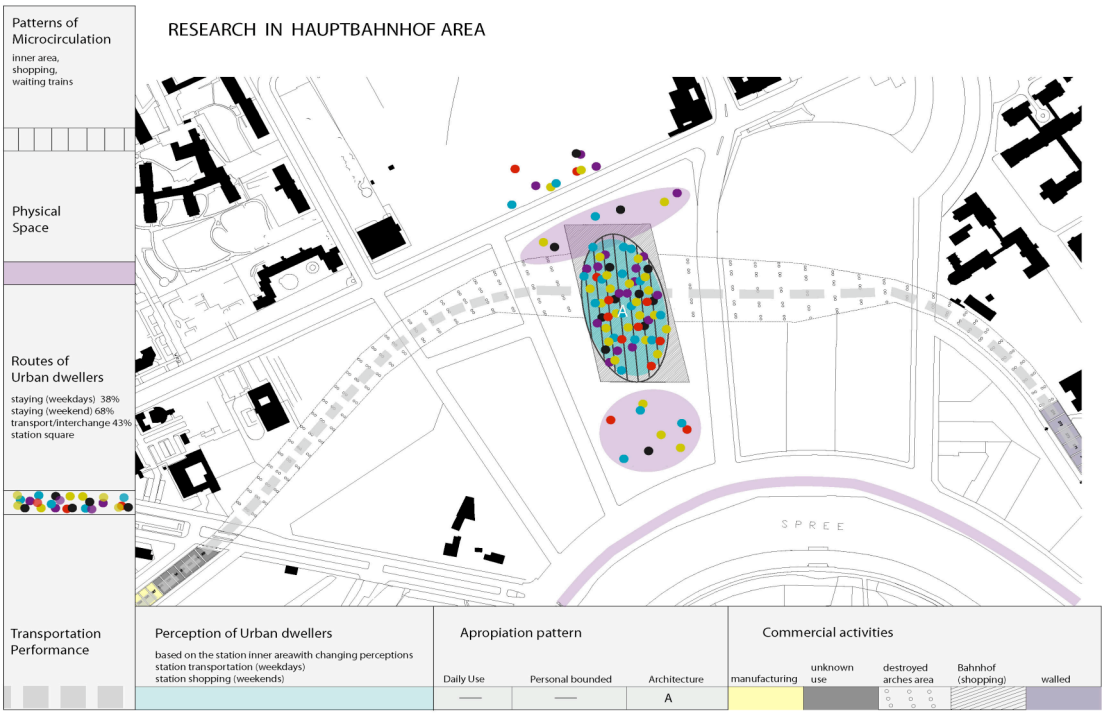


Figure 5-3 Stadtbahn Hauptbahnhof Area Micro-survey

CLASSIFICATION OF AREA

CASE STUDY 1: Hauptbahnhof area - The area is shaped by new urban development of Lehrter Stadtquartier developed in geographically central position in Berlin's urban land, formerly close to the Berlin Wall and therefore after the reunification comparably sparsely populated and underdeveloped. Therefore, from the earliest planning stages, urban development strategies intended to revitalize this area with the new urban development incorporating a central station. The planned strategy should meet the expected increased demand for transportation integration by providing intermodality in a concentrated network hub, on the site of the renovated Lehrter Bahnhof. From the urban development perspective the planning foresaw the 'proper' integration of the increased flows of mobility in the city area, thereby 'creating' urban space of higher quality.

		ASPECT OF EMERGING DEVELOPMENT		
		TRANSPORTATION	**SOCIAL CONTEXT**	**COMMERCIAL ACTIVITIES**
Building Fabric	Central area, former cl. wall areas, long abandoned, remained unused Low to middle class neighbourhood (Moabit), political- bureaucratic floating population. Offices and Equipment are characteristic of the renovation n the surroundings. Outdoor activities n summer times	Transportation Performance: Yayout — 'Turnbahnhof' (ie. tower station)—a layered interconnecting station.	Physical space: Single areas of uses, riverside as structural element, centred on the station inner area	Activities in the area: Strandbars activities along the riverbank (Pressestrand), shopping inner areas station
Social Context		Organization — Two levels for train traffic (upper and lower) and three (in between) for commerce	Routes of urban dwellers: Difference in activities and length of time spent in the surroundings and the station depending on the day of the week, particularly Sunday	New riverbank along the River Spree with outdoor activities such as *Strandbars* (beach bars), pathways and sports activities
		Network Structure — Hub' concent. network structure/Intermodally-Two of the six upper level east-west rail tracks afor Berlin bcal S-Bahn Traffic	The general response was that people use the station as point of interchange, while persons leaving the station were commonly tourists	The station is a major piece of commercial real estate. It offes 15,000 m_of retail floor space over three floors, housing about 80 stores including women's and men's fashion, catering, food, gifts, health / wellness
Uses	Culture / Museum	Concentration of flows — Intercity Express, Intercity, Regional Express, Regionalbahn/ S-Bahn/ U55 shuttle subway/Bus services	Profile of users 38 and 45 years (48% of all interviewed) / 52% commuters, 30% tourists, 12% unemployed, 8% pensioners)	
	Outdoor space riverside		One micro-circulation area: Intense use of the station inside (transportation/ shopping); the station square is left empty and unattractive; little use of the	The station inner area: The shops are open from Monday to Sunday from 8:00 to 22:00, and the station pharmacy is open around the clock.
	Offices	International, national, Regional, and local traffic are concentrated. Express connection to airport and other specific destinations. As a 'hub', the Hauptbahnhof was designed to deal with up to 1800 trains per day (225 long distance trains, 325 regional trains and 627 short distance trains (SBahn)). The daily number of passengers is estimated at 350,000.	Perception of urban dwellers: Different perception on Thursday (space used for travel with a few tourists) and Sundays (space perceived as shopping and entertainment)	Lowest shopping level has a shopping mall layout and includes clothing stores, drugstores and newsagents. Other levels for travels needs (Fast food, snacks, Coffee to go)
	Administration / Government Buildings		Reason: People showed great acceptance of the possibly of shopping on Sunday (Shopping areas obsed in the city) and architecture of the station. Stress bad orientation in the station	
	Transportation Shops concentrated in the Station	Bus traffic and Parking Lots	Conceived space: Asymmetry=between different DB clusters involved in the development and other stakeholders and inhabitants	DB is present with two travel centers, a lounge and a DB Car sharing office, among other things

The pysical space -the lived-percieved-conceived space

		QUALITIES OF EMERGING DEVELOPMENT		
		TRANSPORTATION	**SOCIAL CONTEXT**	**COMMERCIAL ACTIVITIES**
Stakeholders	Moabit Residents			
	Local business renters			
	Deutsche Bahn AG			
	DB Station & Service			
	VIVICO			
	Quartiersmanag. (Moabit)			
	Government Agencies			
EVALUATION / SWOT ANALYSES	? Strengths	Nod of transportation network	Moabit and Lehrter Strasse neighbourhoods Affordable housing River side for recreation	
	? Weaknesses	Lacking of connectivity tram network Lacking of connectivity subway network (except U55 shuttle train) Less uses of park and ride	Financing never materialized Low incomce of parts of neighbourhood (Moabit) Less developed connection with surrounding (sourounded by water&rail) Less developed connection with station square No significant catalyst for urban intensification	No significant stimuli for commerce outside the station No significant stimuli for increase of urban land value
	? Opportunities	Development of Park&Ride (Intermodality) Development of transportation connectivity	Vacant site Lehrter Stadtquartier Potential interim uses Planned Arts campus	Business opportunities
	? Threats		Hauptbahnhof is not capitalized by neighbourhoods and cultural activities Vivico is not clearly committed to current plans Conflicts between Berlin authorities and DB because of shopping opening days	Financial downturn

Table 5-1 Research on fragmented space and urban qualities: Hauptbahnhof area

5.2 Case 2: Multi- uses in the arches and the high-density Savignyplatz area

The second case will analyze the area around *Savignyplatz* station and is organized in the same manner as Case 1. During the times of the city's division, *Savignyplatz* was part of the former City West. In what is very typical for the urban development of polycentric Berlin, it kept its own identity with a mix of commercial, business and housing areas. The active planning time of *Savignyplatz* dates back to the 1970s – to the urban development proposal to develop the city center with new social housing projects, in lots left vacant by war damage.

Today, *Savignyplatz* represents a concentration of diverse activities related to the culture and high-end consumption of the *Charlottenburg* district. There are a high amount of entertainment spaces: mostly galleries, bookstores, small art and handcrafts shops, cafes and restaurants, but also cinemas and clubs. The commercial functions are well developed, however they don't consist of extended commercial strips as they do in other parts of *Charlottenburg* (e.g. *Wilmersdorfer Strasse* and *Arcaden* commercial strip), but rather of small yet very specialized enterprises in the sectors of luxury clothing, furniture and art (painting, photography, literature). Administrative functions are located in different sectors of the district, mostly in the western and northern areas (*Zoologischer Garten, Bismarkstrasse*). The south part of the neighborhood *Savignyplatz* spans between *Savignyplatz* and *Zoologischer Garten* stations. This area is mainly shaped by the new development of the *Kant-Dreieck*, finished in 2004, and *Kantstrasse* with the high-end furniture department store *Stilwerk*.

The building fabric is currently in the process of renovation, and shows no specific master planning. Although the density has remained stable until today, the social and spatial context of the neighborhood has changed significantly. Today, the area shows a significant decline in residential density (to 200 p/ha in 2008/ average of 300 p/ha in 1980), due to the enlargement of existing flats to sell as higher income accommodation, developed by means of private commercial initiatives and enterprises rather than based on urban planning. This process has been accompanied by a general increased ownership in the area (25% compared to the average 9% in *Charlottenburg*) and the reduction of social housing (below 5% compared to the average 20% in *Charlottenburg*).[120] The area cannot be described as a tourist spot,

[120] Senatsverwaltung für Stadtsentwicklung, Statistisches Landesamt Berlin – Volkszählungen 1970, 1987, Mietpreisenwicklung 2007

compared with other areas of Berlin, and the data analysis indicates that inhabitants and employees of the nearby businesses are the most frequent users of *Savignyplatz*.[121] The general layout is of fully commercial ground floor development especially in the area around the *Savignyplatz* square itself and the streets that connect to the station, such as *Knesebeckstrasse* and *Bleibtreustrasse*.

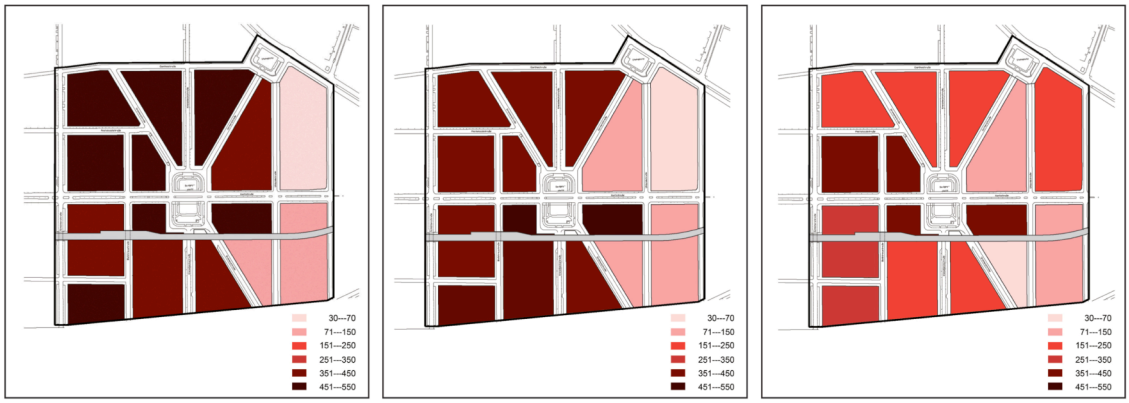


Figure 5-4 density decline around Savignyplatz station, (Sources: Alfaro d´Alençon 2009)

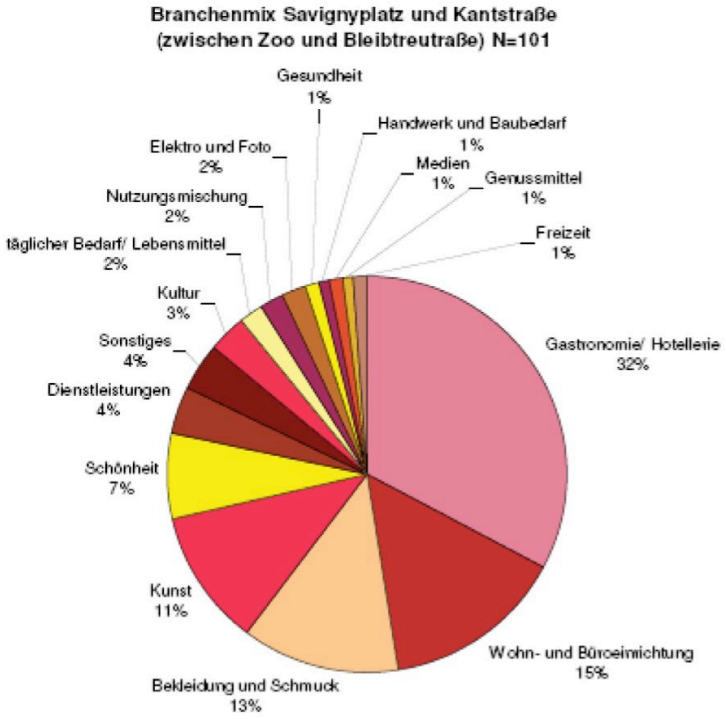


Figure 5-5 Retail structure at Savignyplatz, (Sources: Alfaro d´Alençon 2009)

[121] See Annex, Alfaro (2009)for survey table

5.2.1 The research on *Savignyplatz*'s emerging urban space in terms of transportation performance, urban context and associated commercial activities

1. Social Area Analysis

Transportation performance

The station *Savignyplatz* opened in 1889 and was one of the last stations built in the Stadtbahn network. The station was one of the stops in the neighboring city of *Charlottenburg*, the town that grew into one urban agglomeration with Berlin around the Stadtbahn connection to the capital.

- **Transportation layout**: *Savignyplatz* station was built on top of the viaduct, and serves the basic lines of the suburban *S-Bahn* traffic.

- **Transportation organization**: In the station, the railway lines stop, as typical for the *Verkehrsstation*, on both sides of a single passenger platform. Two additional railway lines for regional, national and international traffic, pass the station without stopping. The station still represents Orth's typical four-track design.

- **Network structure**: Limited to suburban traffic, *Savignyplatz* is a small station compared to others in the system. The network activities at *Savignyplatz* station are limited to a single level basic platform with two train tracks and two entrances, accessible from *Savignyplatz* and from the nearby street *Knesebeckstrasse*.

- **Concentration of flows**: The area of *Savignyplatz* is additionally served by a Metro Bus and express buses. Additional parking spaces for *Park & Ride* are not available

The social- spatial context

The physical space: The area of *Savignyplatz* could be described as a dense central area, middle to high-class neighborhood with a 'traditional Berlin urban area' pattern of urban development and a recent spatial mix resulting from a process of successive development. Until the late 1970s, no recognizable building activities were undertaken at the main square of the area, the *Savignyplatz* square, which is just outside the

station. In the late 1980s *Savignyplatz* itself was redeveloped and upgraded in terms of green inner city and open space, along with the introduction of a new face for the *Savignyplatz* arches after the ownership was transferred from the GDR led Deutsche *Reichsbahn* to the West German authorities. Different forms of greenery and a small park where installed in the square and the direct surroundings of the arches.

- **The passages**: The southern part of the *Savignyplatz* square[122] is connected with the Stadtbahn station and the Stadtbahn viaduct, which actually forms the southern facade of the square, through a pedestrian zone and one part of the *Savigny Passage.* The *Savigny Passage* continues westwards towards the *Zoologischer Garten* station. Both passages have in fact developed from the buffer area between the viaduct and the open Berliner Block structure. The viaduct, which frames both passages and the entrance to the station, consists of densely developed arches in an intermediate density urban neighborhood. Thus, the passages are connected through *Savingyplatz* to *Kantstrasse*, a major thoroughfare, which connects the area to several surrounding urban areas, such as *Messe Nord / ICC*, *Zoologischer Garten and Kurfürstendamm*.

Commercial activities in Savignyplatz area

- **Area *Savignyplatz* station**: The viaduct arches Nr. 603 provide the entrance to the station and are additionally equipped with a variety of shops, restaurants and other facilities. Through these, the station contributes to a public ground floor in the adjacent buildings and dense, mixed-use urban surroundings. Supermarkets or food stores are not present in the arches and therefore the area is not suitable for everyday shopping. The activities located in the station's surroundings include bookstores, fashion stores, galleries, cafes and restaurants. The viaduct arches house the reputed architecture gallery '*Aedes*', and the biggest bookstore in Berlin to specialize in art, design and architecture—'*Bücherbogen*' (Book Arches).

[122] The square Savingyplatz was built under the Hobrecht master plan for Berlin in 1862 for the planned extension of the former medieval city. It was designed as a rectangular square, with a typical radial system of streets converging in the square on the northern side, and the two-lane Kantstrasse cuts it in half in the east- west direction. This street divides the area into two main parts, which could be understood as independent from the square itself. In the northern part there is a green area, surrounded by the converging streets.

- **The western part of the viaduct structure**: The arches house a number of restaurants, a trendy second hand shop, antique boutiques and small retail units. Within these uses, two sub-micro scale areas can be additionally identified: the area of arches directly underneath the *S-Bahn* tracks (space for bookshop, haberdashery shop, restaurants, bars and gallery); and the area following, but not housed within, the viaduct structure of the *Savigny Passage*. The viaduct reinforces these as it forms two main passages of commercial activities. The renting register shows increased changes in the rental patterns of the *Savigny Passage*. The interviews with the arches renters confirm that the passage is lacking customers and therefore businesses often change hands.

2. The routes of urban dwellers

This section will give an overview of the experiences by urban dwellers that were found during the survey of the *Savignyplatz* area. The survey was conducted in March 2009. The age of the respondents ranged between 18 and 70. The predominant group was aged between 36 and 50 years (45% of all interviewed). In this group, most of the respondents were employees and students, while a second group consisted of pensioners. Two thirds of the respondents were local residents.

The questions were:

1. What are you doing here?

2. How did you reach this place?

3. Do you live in the surroundings, where do you live?

4. How often do you use this place?

5. Questions about age and profession

- **Dwellers stay or frequent the area**: The survey on the people staying and passing by at different times of day showed that in the morning hours approximately the same amount of people passes by as stays in the area (55% to 45%). In the afternoon, the amount of respondents staying increased and the interviews showed that a similar amount of Berliners, tourists and local inhabitants stay in the area around *Savignyplatz* station

and its viaduct (Total staying 68%, of them inhabitants 37%, locals 29%, tourists 25%, employees 9%).

- **Uses in the area by city dwellers**: The interviews established the most frequent visitor group was the inhabitants. They visited the arches more than three times per week to visit the cafes, the galleries or to buy books. Visitors, the second group, come to the area frequently (each week) for entertainment and other activities. A small group of respondents were at *Savignyplatz* to work in the arches or in the station's surroundings (total uses inhabitants 37%, locals 29%, tourist 25%, employees 9%).

- **Pattern of microcirculation locations**: two microcirculation areas were established by examining the movement patterns of the people remaining in the area—the first and most frequented was around the arches in front of the station, and the second was alongside the west-arches towards Zoo (The *Savigny Passage*).

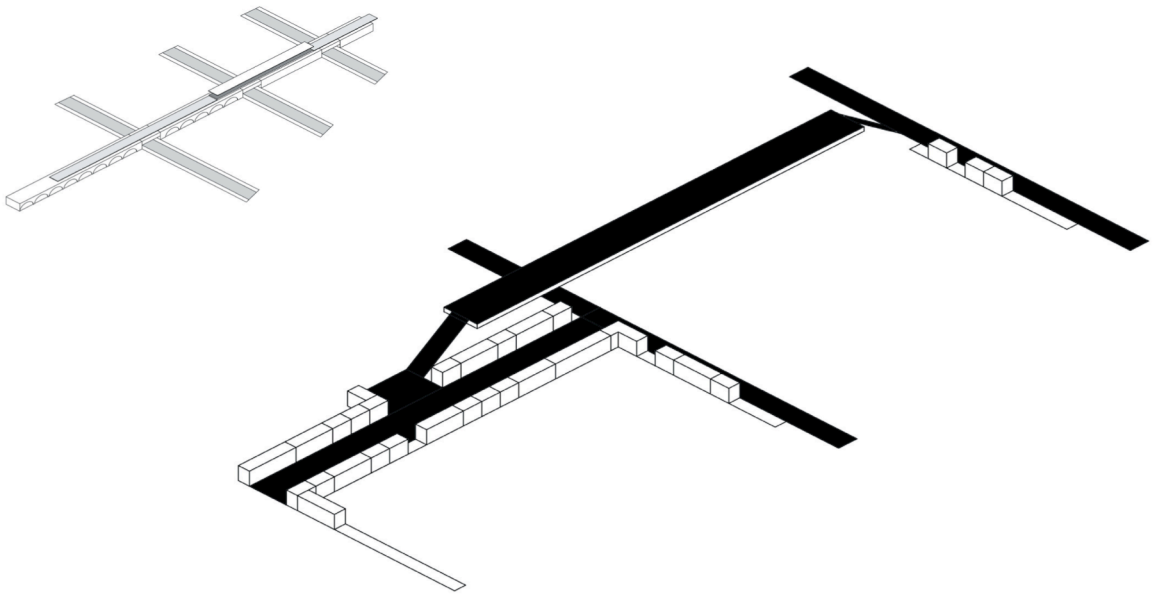


Figure 5-6 The functional layout of the station and its surroundings. (Sources: Alfaro d´Alençon 2006)

The drawing shows the train platform on the upper level interlinked with the arches in the ground and the open Berlin Block structure, building on of the first passage in the area.

3. The perception of urban dwellers

Figure 5-7 Images used for the interview on the urban dwellers' perception of Savignyplatz (Sources: Alfaro d´Alençon 2009)

The first picture shows the Savignyplatz arches (Savigny passage) in the west part, the second the green square of the Savignyplatz, the third the viaduct space in front of the station, and the fourth the station itself.

This section elaborates on how city dwellers engage with the transportation space in their daily routine. Research was conducted in front of the station's entrance. The results of the first set of interviews (see Chapter 4.3.2), with the purpose of researching urban dwellers' perception on the Stadtbahn, identified the viaduct arches of *Savignyplatz* and those at *Hackescher Markt* as landmarks. This second, more in-depth set of interviews identified that *Savignyplatz* is visited for purposes beyond traveling and that the majority of the people who arrive in this area by train remain in its surroundings for different reasons (such as leisure activities, daily routine, working etc.).

One of the difficulties encountered when studying highly frequented areas is, as already indicated in the methodology chapter, the amount of people that rush by. Therefore, for this research it was necessary to devise adapted research techniques for obtaining 'by the way', quick, valid responses to the survey. One of these techniques involved a catalogue layout with four different pictures of *Savignyplatz*. The

respondents were asked which of these pictures best represented *Savignyplatz*. The pictures included an image of the green area; two showed the viaduct and the last one was of the station itself. The aim was to engage respondents with these pictures to open the survey, while rushed passers-by had the possibility to quickly point at an image.

The research was focused on the questions:

1. How are the arches identified as a landmark for the people in the area and how do the arches contribute to the image of Savignyplatz?

Once the respondents had engaged with the pictures, the second question was:

2. Why did you identify the arches as being so significant for *Savignyplatz*?

- **First question**: Most frequently named pictures for *Savingyplatz*: The survey results were very interesting in that pictures 1 and 3 (showing the arches) were highly ranked within the answers. Both these pictures represented either the viaduct space on the west part of *Savignyplatz* (*Savigny Passage*) or the viaduct arches in front of the station. The green space and the station itself accounted for the minority (1 with 41%; 2 with 8% and 3 with 49% while 4 remained less chosen with 2%). The questionnaire established that local residents gave slight preference (15% more than travellers) to the west part of the viaducts, the *Savigny Passage* and, although not everyone uses this area of the arches (as seen from the survey on uses in the area this was 60%), they engage with the arches and identify them as the 'place' of *Savignyplatz*.

- **Second question**: Patterns of identification: Special remarks need to be made to show how the identification with the area is contextualized, because an interesting relation between identification and uses exists (see 2.2.2 Lefebvre, de Certeau). This finding can be explained in two ways. One is that while dwellers identified the viaduct as the image for *Savignyplatz*, the majority expressed that they only knew the side of the viaduct facing the square and the area of the viaducts in front of the station, both of which are commercially used. The 'rear' of the viaduct, which faces a school, was known to only 45% of the persons frequenting the area. The second observation is that the viaduct arches contain a high percentage of

'expensive' commercial enterprises, such as fancy restaurants and bookstores. Although travelers do not frequently use these services (this information was gathered from the interviews) and furthermore 9 % of the respondents come to this area to work, the image of the place is still strongly associated to these arches. The survey showed that people engage with the viaduct for different reasons. One of the most common ones is that the people had been in the area many times and had personal stories related to the arches. Another reason was that the arches become part of their everyday life because they had done diverse activities in the arches and their surroundings such as working, running their own business or living close by. The third reason was that people were aware of the particular shape of the arches and engaged with the architecture. One respondent said that the arches are one of the biggest houses in the city, others identified with the façade of the arches, which makes the impression of a building.

5.2.2 The space of varying urban interest: Between appropriation and 'place-making'

Research for this section was based on qualitative interviews with the *DB Station & Service*, renters of the arches as well as scholars' dialog on the topic of urban development in the space of the Stadtbahn (at workshops conducted by the author at the Technical University in Berlin, between 2007 and 2010).

The arches and their rental have become a main point of conflict in the area. The developer's commercial portfolio strategies conflict with the urban development realized by the inhabitants and consolidated in the arches. The transportation function of the station and its impacts for the area are not a part of the problem. The activities in the viaduct spaces are currently under mounting financial pressure, according to information directly obtained in interviews with the renters of the arches and the DB Station & Service unit. This ongoing pressure represents a bias by the DB Station & Service towards the restaurant and café culture already installed in the arches and the immediate surroundings of the station. Rent prices have been successively increased, which, as renters confirm, excludes uses such as second hand shops and more recently small galleries. Many current shopkeepers are facing the imminent closure of their business. In the interview with the *Deutsche Bahn Station & Service* branch, it was made clear that the renting policy is in a restructuring process. This means there

are two different rental modes: in the case of restaurants and cafés *Deutsche Bahn* participates directly in the commercial profit of the enterprise, while other uses are tied to the old mode where the rent is based on the square meter price. Secondly, the arches in the area of the station are under the administration of Station & Service, while the other arches are rented along the guidelines of *Deutsche Bahn Immobilien*. Currently plans are being made to merge these independent wings into a centrally managed administration. Within this restructuring process, a general position is expected to be taken regarding the renting strategy of the arches—a portfolio strategy adapting the renting price to a direct participation in the businesses' profit. Here, DB gives preference to commercial activities that achieve a higher profit margin. The commercial figures already show more arches being rented to café and restaurant enterprises, but a significant decline of renting in the viaduct was also found. Arches identified as *Savignyplatz* landmarks by urban dwellers, such as the light fixture shop *Arno* (founded in 1928) held on to its central location at *Savignyplatz* and its clientele for many years. It was one of the few shops to survive World War II and has now closed its business due to the financial pressure of increased rents. The second hand shop that held its position in times of the marginalized Stadtbahn space in the 1980s closed down in June 2009. Shortly after the research was finished for the *Savigny Passage*, at the turn of the year from 2009 to 2010 *Aedes Galerie* and café have not renewed their contract for the arches because they could not afford to pay the new rent price, which was double the price of the previous decades. The point of conflict remains the arches and the way marketing concepts and their interpretation of how the space has to look is dominating the citizen's individual appropriation of arches.

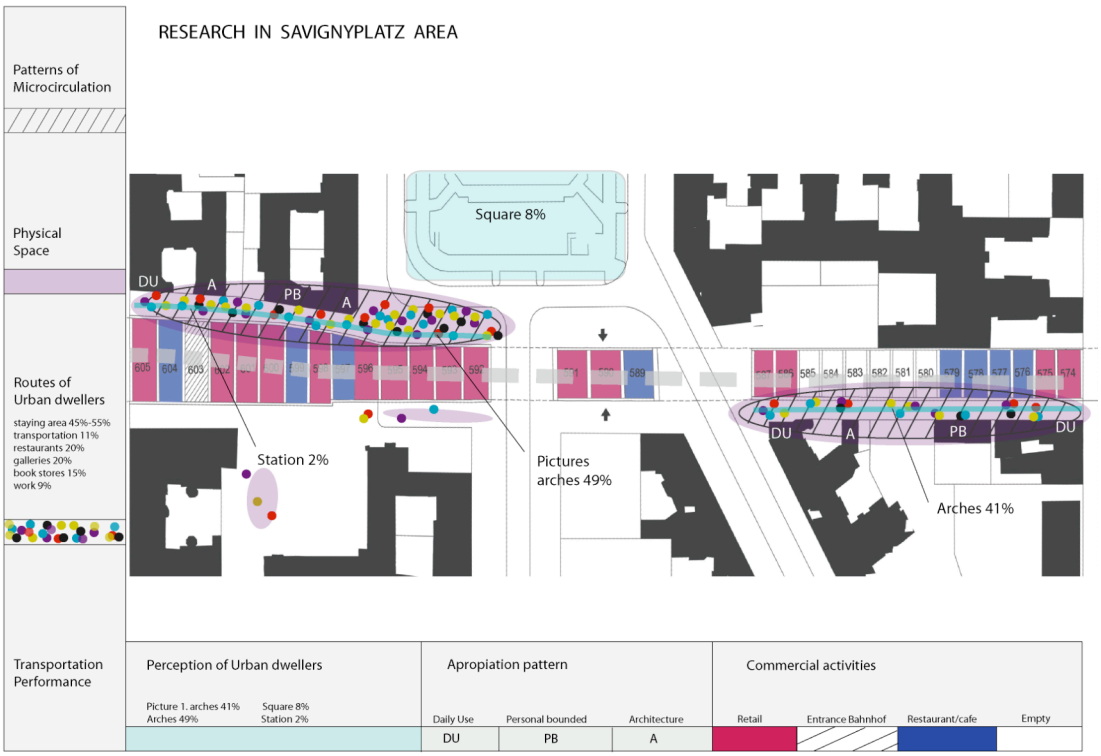


Figure 5-8 Savignyplatz Area Micro-survey

CLASSIFICATION OF AREA

CASE STUDY 2: Savignyplatz area - Area shaped by new urban development of the Kant-Dreieck and Kranzler Eck, finished in 2004, 2007 and Kantstrasse with the high-end furniture department store Stilwerk.

		ASPECT OF EMERGING DEVELOPMENT		
		TRANSPORTATION	SOCIAL CONTEXT	COMMERCIAL ACTIVITIES
Building Fabric	Behet Block structure /publi ground floor with commercial units	Transportation Performance: Layout — Stadtbahn traffic	The physical space -the lived-percieved-conceived space: Physical space — Development of diverse buffer areas (arches with adjacent block structure)	Activities in the area — Restaurants, clothes, design stores, art
Social Context	Midde to high-class neighbourhood	Organization — Fourtack outline	Routes of urban dwellers — Area for staying. Same percentage of inhabitants as visitors frequent area (Totalstaying 68%, of them inhabitants 37%/ bcalc 29%/ tourists 25%/ P/iemployees).	Service, Retail, daily shops
	Significant decline in residential density and increased of ownership (to 200 p/ha in 2009/ average of 300 p/ha in 1980). With reduction of social housing stock (below 5% compared to average 20% in Charlottenburg): Enlargement	Network Structure — Verkehrsstation	Densely developed / Mixed uses as transportation, restaurants, gallery, book store, work (11%/ 20%/ 20%/15%/9%)	
Uses		Concentration of flows — Stadtbahn traffic	Profile of users 18-70 years / 36 - 55 (45%) / Employees+Students, second group Pensioners	
	Entertainment spaces / Culture		Different areas of micro circulation (particular two passages)	1. Passage: Center of Art and Architecture, Gallery, Book store, cafe
	High-class consumption / Luxury clothing and furniture	S5 Westkreuz station to Strausberg Nord station; S9 Spandau station to Flughafen Berlin-Schönefeld station; S7 Potsdam Hauptbahnhof to Ahrensfelde station; S75 Spandau station to Wartenberg station)	Perception of urban dwellers — Arch space identified as the 'Savignyplatz' (pictures 1. arches 41%; 2.Square 8%;3.arches 49%;3.Station 2%)	Arches and Passage
	Small art and handcrafts shops		Reason: Personalbondage with the arches / Daily Incorporation of arches /Architecture of the arches: 'the longest building in the city'	2. Savingy passage: daily shops, restaurants, book stores
	Galleries/Bookstore		Conceived space — Conflictive= Diverse users/arch space renters and struggle with renting pobles by developers	
	Cafes and restaurants			
	Cinemas and clubs	Bus traffic		

		QUALITIES OF EMERGING DEVELOPMENT		
		TRANSPORTATION	SOCIAL CONTEXT	COMMERCIAL ACTIVITIES
Stakeholders	Savingyplatz area residents		•	
	Local business shopkeepers		•	•
	Deutsche Bahn AG	•	•	
	DB Station & Service		•	•
	Visitors			
EVALUATION / SWOT ANALYSES	? Strengths	Integrated transportation network	Central location Strong community Mixed uses (Education, business , residential, Arts environment	
	? Weaknesses		High percentage of arches renters give up there business due to DB Station & Service renting policy (station area)	
	? Opportunities	Development of Park&Ride (Intermodality)	Strong identity for the urban dwellers with the transportation space through arches Development of several local micro areas	Business opportunities
	? Threats		Eviction Gentrification/ loss of affordable arch space DB Station & Service tied to current plans	Financial downturn

Table 5-2 Research on fragmented space and urban qualities: Savignyplatz Area

5.3 Case 3: Temporal uses in the arches and emerging development of the *Jannowitzbrücke* area

The third case study is based on the area around *Jannowitzbrücke* station. The particularity of this case is that as well forming the station structure, the viaduct flanks the River Spree towards the east. During Berlin's period as a divided city, the part of the *Jannowitzbrücke* north of the *Holzmarktstrasse* belonged to an area of mass-housing development around the City East. The south side with the station and viaduct faced a former City West industrial area of the *Kreuzberg* district across the River Spree. More recently this waterside area has been developed by several ateliers and workshops for dance, design, architecture, painting and spaces for the music industry, such as the Universal Studios at the *Oberbaumbrücke* (Bridge) and accompanied by several clubs and *Strandbars* (beach bars) in the neighbourhood of the station. Also characteristic for the area is the fact that for decades the area was part of the border along the River Spree between East and West Berlin.

5.3.1 The research on *Jannowitzbrücke:* emerging urban space in terms of transportation performance, urban context and associated commercial activities

1. Social Area Analysis

Transportation performance

Jannowitzbrücke station was included in the first planning period of the *Stadbahn* and was built between 1881 and 1882 along the *Holzmarktstrasse*, a former industrial area also linked and developed within the Stadtbahn as outlined in the Chapter 4.1. The station was extended from 1927 - 32 to connect the Stadtbahn with the newly constructed subway line from *Gesundbrunnen* to *Neukölln,* today the subway line U8. The subway tunnel built beneath the River Spree was included in the extension and the viaduct was redesigned as the station entrance. With this extension, *Jannowitzbrücke* became an interconnecting station between the Stadtbahn and the subway.

- **Transportation layout**: The functional transportation parameters of *Jannowitzbrück*e Station respond to the network demand of the *Pilzkonzept* as an 'interconnecting station'. Accordingly *Jannowitzbrücke* interconnects the subway and the overground Stadtbahn service.

- **Transportation organization**: In accordance with the general design of the Stadtbahn, the station was developed with the tracks above and the station entrance on the ground floor. The interconnection function can be read in the station's cross-shaped design, with two aboveground Stadtbahn tracks and the station's underground level with two tracks for the subway line.

- **Network structure**: The station links the overground Stadtbahn and its typical four track design and the subway line U8. For the intermodal exchange, parking areas in the station's immediate surroundings were provided, and barrier free access to the station and bus connections to *Mitte, Friedrichshain* and *Kreuzberg* with night services are provided.

- **Concentration of flows**: The Stadtbahn tracks on the viaduct structure serve four Stadtbahn lines on one platform (*S5 Westkreuz* station to *Strausberg Nord* station; *S9 Spandau* station to *Flughafen Berlin-Schönefeld* station; *S7 Potsdam Hauptbahnhof* to *Ahrensfelde* station; *S75 Spandau* station to *Wartenberg* station). The station also hosts a *DB Carsharing* office, the rental point for several cars provided by the rail company, and a car park for the Park & Ride scheme. Close to the River Spree, the station is in the immediate surroundings of the ferry harbor, which is used in the summertime to offer sightseeing boat tours of Berlin's canals, the River Spree and the surrounding waterways.

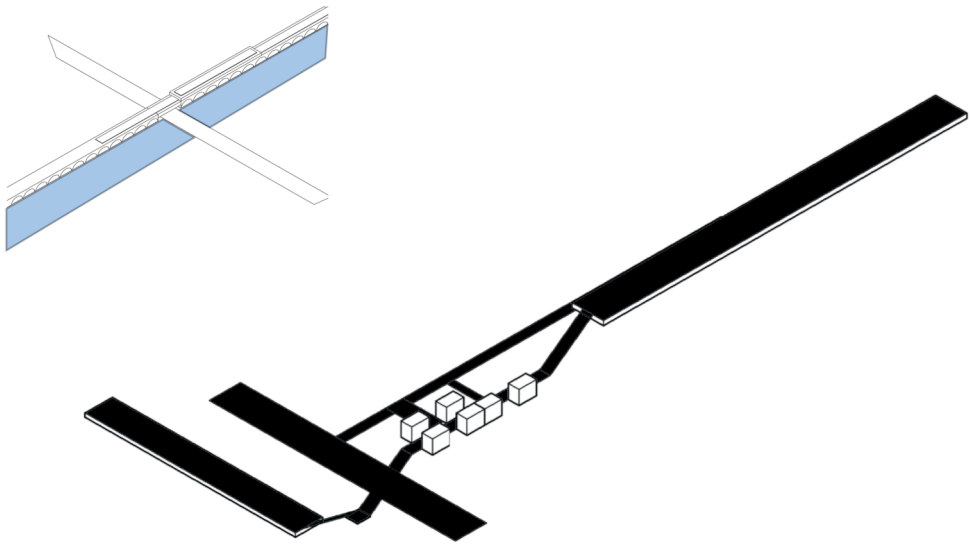


Figure 5-9 The functional layout of the station and its surroundings. (Sources: Alfaro d´Alençon 2006)

The drawing shows the train platform on the upper level and the subway lines. Through a platform and several arches in the inside the station is interlinked to the station inner area.

The social- spatial context

The area of *Jannowitzbrücke* could be described as a developed area of relatively low density. The dominant image of the case study area is one of a crossing point between the districts *Mitte* and *Kreuzberg*. It is a middle- to low-income *neighborhood* with former GDR mass-housing stock on one side and, across the River Spree, a traditional Berlin industrial urban area pattern with a recent spatial mix resulting from a process of successive development in the conversion from industrial use to creative clusters. Since 2000, the area has hosted diverse uses by the creative industry, art workshops and festival spaces, and has been redeveloped and upgraded in terms of temporary open space uses.

The urban surroundings are dissected by large roads and are thus detached from the station and its station square and the eastwards running viaduct structure. At the station square, access to the arches is provided from the inside of the station. With a middle gangway, the station is divided to access the arches framing the façade. The front side of the station hosts the station's lobby, the commercial activities and the platforms for the Stadtbahn, the subway and additional commercial activities. The rear part of the station contains *DB* training and seminar rooms.

- The station with its viaduct structure is located directly adjacent to the River Spree. After the station the viaduct structure runs northeast, and the buffer area between the arches and the river starts to increase. The viaduct frames both the station and the increasing buffer area. The morphological development of the Trias Building close to the station to the east (the headquarters of the BVG are located here) considered the viaduct and the opening of the arches. The building is composed of a linear block parallel to the viaduct, which keeps a distance between the viaduct structure and the new building. The first floor and entrance area of the building relate to the height of the viaduct. Above, three curved buildings stretch out perpendicularly towards the Stadtbahn tracks and the viaduct. Several Strandbars, temporary art performances and flea markets take place in the buffer area between the viaduct structure and the River Spree. This space emerged because the viaduct structure curves away from the river to the northeast to reach the Ostbahnhof station, providing a buffer area between the viaduct and its arches and the river.

2. The routes of urban dwellers

This section was completed in line with the two previously presented case studies in order to understand the dwellers' movements and reasons for staying or visiting these surroundings. The survey was conducted in June 2009. The age of the respondents ranged between 18 and 80. The predominant group was aged between 24 and 45 years (48% of all interviewed). In this group, most of the respondents were students, young professionals, workers and people involved in the creative sector. The research, as with the other two case studies, was conducted at different times and on different days.

The questions were:

1. What are you doing here?

2. How did you reach this place?

3. Do you live in the surroundings, where do you live?

4. How often do you use this place?

5. Questions about age and profession

    - **Dwellers stay or frequent the area**: The survey on the people staying and passing by at different times of day and on different days shows that the majority—approximately 80% of the people—passes by in the station area and 20% remain in the 'station square' with the supermarket. However, the viaduct structure outside of the station is a place to stay for different reasons. In the afternoon, the amount of respondents staying in the viaduct area increased to 68% and the interviews showed that Berlin residents, tourists and renters of the arches stay in the area (total staying 68%, of them renters of the arches 58%, locals 22%, tourists 20%). The figures of those staying and the profile of the people changed on Saturday night (total staying 70%, of them renters of the arches 8%, locals 65%, tourists 27%).

    - **Uses in the area by city dwellers**: The counting session showed that the station is mainly used for the purpose of transport interchange—70% of the respondents cited this reason in the morning (some respondents indicated that the station is not adequately serviced by buses). There were slightly fewer people in the station in the afternoon, 90% of whom used the station

for changing trains. The station is used mainly as a transportation interchange for working people who live in the south and east part of Berlin (*Friedrichshain, Marzahn, Mitte* and *Kreuzberg*) and, for the majority, this point of interconnectivity is part of their daily route to work. However, few people take advantage of the nearby supermarket and the fast food shop on their way home. People living in the neighborhood mainly use these services. A minority comes to the station by car to use the supermarket. Homeless people and groups of beggars were standing around the entrances in front of the station, asking for money from passengers moving between the trains, the supermarket and on their way home. The DB Company—Station & Service—has provided additional functions for the DB in the station arches. This underlines the attractive character of the station and its interesting location. The arches outside the station house only one additional function—a nightclub—that opened in 2006 and is accessible from outside the station.

- The next set of arches that form the façade of the station towards the River Spree remain closed and are accessible from a parallel platform next to the river. In general, *Jannowitzbrücke* station is not as heavily frequented a space as *Savignyplatz* or *Hauptbahnhof* and fewer people remain in the few shops inside the station. Outside of the station area, the interviews established the most frequent visitor group was that of the office buildings in the station's surroundings (the Trias Building[123] owned by the BVG Company), the renters of the arch spaces for car workshops and small enterprises. The second group came mostly in the afternoon and during the night hours of the weekend for entertainment and art performances. These activities were more popular in the summer with some people visiting the area several times a week. Increased amounts of young people arrive during the night hours at the station to visit the Strandbars and the flea market in its immediate surroundings close to the water. The bar in the arches of the station with views of the River Spree is also visited.

- **Patterns of microcirculation**: Microcirculation patterns divide the area into three parts. The first groups frequent the station for traveling and most of the

[123] Although the purpose of this thesis was not to provide the analysis from the morphological perspective to analyse the interaction, this building shows a particular dialog with the viaduct that needs to be mentioned.

partygoers pass through the building on their way to the newly opened *Strandbars* to the east of the station. The second group (the minority 20%) stays in the supermarket on the station square. The third group outside of the station area is the viaduct renters and the visitors of the famous riverside location and along the Spree. The people visiting the *Strandbars* and the flea market formed the majority of people who specifically came to visit *Jannowitzbrücke* surroundings—the buffer area.

3. The perception of urban dwellers

This section elaborates on how city dwellers engage with the transportation space in their daily routine. Research was conducted in front of the station's entrance and in the area along the viaduct structure. The picture method, which had been used successfully at *Savignyplatz* and unsuccessfully at *Hauptbahnhof*, failed to engage people here. The strategy was to increase the length and scope of the interview phase to research the dwellers' perception of the station. Therefore, the interviews were extended to incorporate different days and hours. Without using pictures the survey asked the following questions:

What is identified as a landmark for the people in the area and how do the stations or arches contribute to the image of the area?

- **Interviews result**: The survey provides the insight that the majority of the respondents (70%) knows about the architectural value of the station and appreciates the closeness of the station to the water, and a high percentage of the respondents wondered why the station does not make more use of the view ofto the River Spree (50%). The respondents imagine the station could be developed to house additional Strandbars, as happened in other historical areas of the city like Monbijou Park. They suggested that the ferry port could be moved into the station, giving the station a better functional use. Dwellers maintain the view that the monumental heritage that the station represents is the reason that prevents the station being developed. People generally use the station as a means to get to other locations in its surroundings. A majority of the people using the station as a point of interchange stressed the poor accessibility of the interconnection. The urban dwellers perceive the zone of interconnection as a large area without any comfortable access and in general the station is experienced as an

unpleasant environment. This does not contribute to the image of a well-developed station.

- The answers about the viaduct structure show that respondents wonder about the less developed arches outside (54%), where most of the arches are in a bad condition. The respondents in general were not well informed about the temporary activities in the arches (60%). This image changed in the interviews with the arches' renters. They stated that the location is good for the workshop businesses related to cars, due to the low rent price that they pay in comparison with other available space in the area. Creative people, such as painters and festival space organizers who settled down in the area temporarily, were well-informed about the art happenings in the arches and were interested in using the arches for their purposes. However, for creative people, the situation in the area is only interesting for temporary uses because they could not afford to pay the rent. For this group of respondents the arches carry the image of an attractive urban setting beyond the commercial areas in *Mitte*, the district that is home to an established art scene. Several interviewees were interested in renting the arch space or locating themselves and their work in the area. The owners of Cabuvazi, a children's theater and acrobatic school, are considering leaving the Ostbahnhof area and moving to this area, close to other creative activities.

Commercial activities in the Jannowitzbrücke area

- **Area of the station**: The area around the station shows the layout of single commercial activities, such as the new supermarket in the front of the station, the station square, a fast food restaurant and a gas station to the east followed by the BVG headquarters building. The inner area of the station, mainly around the entrance, contains the kind of commercial activities typical of interconnecting stations: a newsstand, fruit shop, fast food kiosk, bakery and florist. However, in 2008, a temporal art performance was located in the arches, *ART EXPRESS- Aktivität, Kreativität, Mobilität* with the permission of the *Deutsche Bahn AG,* organized by the artist Gabriel Heimler. From *Jannowitzbrücke* to *Ostbahnhof* (the viaduct structure ends as a bridge crossing *Holzmarkstrasse*) between 2006 and 2009 three arches were reopened in that area, providing spaces for a new flea market.

The flea market was located in front of the arches at *Michaelkirchstrasse* and *Holzmarktstrasse*. This location is next to the temporary *Strandbar* and festival area in the space between the railway and the River Spree. Uses in these viaducts have also included the 2nd Berlin Art Biennial in 2001, which was funded by the *Kulturstifung des Bundes* and the *MoMA* in NYC[124]. Several arches were reopened for art exhibitions and performances relating to the biennial initiative. Several galleries remain and more have recently opened as temporary uses of the arches, such as the Maribel Lopez Galerie behind the Aral petrol station and the three following galleries behind the Trias Building: Vielmetter Berlin Projects, Praz-Delavallade, Atle Gerhardsen and Galerie Stella. There is also a music hall in Viaduct arch Nr. 49.

- The urban area outside of the station: Most of the arches towards *Alexanderplatz* have been renovated and 53% of the arches are occupied with uses such as small retail shops and restaurants, as well as car workshops.

5.3.2 The space of varying urban interest: The appropriation of the arches and buffer area

This section was researched using qualitative interviews with the DB Station & Service and renters of the arches and people using the buffer zone.

With its proximity to the Spree, *Jannowitzbrücke*'s station and the viaduct structure to the east (to *Ostbahnhof*) are situated in an area of planned urban redevelopment strategies. The riverbank is regarded as a profitable element for real estate development. Once developed as an industrial area for the water-dependent wood industry with its market place at *Jannowitzbrücke*, today the area holds potential for the creative industry and temporary outdoor activities along the River Spree. This development has awakened interest and has been recently accompanied by pressure from the private real estate market and increasing gentrification. Thus, investors

[124] Approximately 60,000 visitors from all over the world, including 1,800 press representatives visited the international exhibition of contemporary art held in three locations, the old Postfuhramt (old post office), the KW - Institute for Contemporary Art, the S-Bahn arches at Jannowitzbrücke and at the Allianz Treptowers. The exhibition featured works of around 50 artists from 30 countries. Art pieces ranging from film and video to installations that sought to explore the relationship with the viewer and attempted to interact with the public were the central subject of the exhibition.

envision new recreational zones and office and residential developments with good connections to the transportation network and dense urban surroundings provided by the so-called 'creative and young' districts of Berlin *Kreuzberg*, *Mitte* and *Friedrichshain*. One of the investor-planned projects between *Jannowitzbrücke* and the *Schillingbrücke* is a macro project for the intensified development of a new 'creative cluster' known as *Mediaspree*. Thus, the strategy is to incorporate office buildings for 'creative' work with the refurbishment of old, industrial docklands, new residential areas with water views and the transportation infrastructure to develop a concentrated business and transportation cluster.[125]

This type of planning is developed with the development culture of Public Private Partnership (PPP), where the role of the state was to participate in the selling of the land and to benefit from the taxes obtained from the development. This project structure remains unique compared to other projects in Berlin, because many of the areas along the River Spree are in private hands and the state has a secondary role behind the real estate developer in the planning and design of the PPP Projects here. This planning strategy led to the area being developed in line with private ownership criteria. The territory around the east part of *Jannowitzbrücke* has become home to temporary outdoor leisure activities because of the risk of eviction in the area.

However, due to massive protest of inhabitants in *Friedrichshain* and *Kreuzberg* and the referendum against the building of the *Mediaspree* project in 2008, the investors and the state abandoned the macro-planning proposal. A new planning proposal is in the pipeline. This involves greater state participation and is being developed together, at least in part, with the '*Zwischennutze*r' (the temporary users of the area). Because of the previous conflict, the aim is now to produce a planning proposal for a '*Quartiersmanagement'* (integrative neighbourhood management). The private owners of the building land have thus put the uses of the area around *Jannowitzbrück*e in a 'waiting position' before committing to any potentially financially advantageous urbanization projects. Therefore, the area around the station and the viaduct arches remains within a conflictive urban development structure. Although the surroundings are experiencing a growth in cultural activities and the beginnings of an international investor led gentrification process, the station remains relatively unaffected. The arches that are accessible from the inside of the station are held by DB Station & Service for

[125] See for project plan www.mediaspree.de (accessed 7th. May 2008)

the company's own uses, such as training and conferences. However, the DB Group has pursued a strategy of relocating to its own real estate and thereby reinforcing specific uses in the train stations. Therefore, the station area remains untouched by the conflictive urban development. The role of the viaduct towards *Ostbahnhof* is completely different. Several arches have been incorporated into the art movement by artists searching for new areas in Berlin where they can work in a more affordable environment than that of the well know cultural and art areas of the city, such as *Mitte* and *Prenzlauer Berg*. With temporary renting policies, the arches have been incorporated into the movement and provide space for these creative activities. Other uses of the arches, such as workshops and small enterprises, remain there because the spaces are still available at an affordable rent. It remains to be seen if the pending planning process will attempt to consolidate the art and subculture activities that have developed in the area and if the renting of the arches will be proactive in this development.

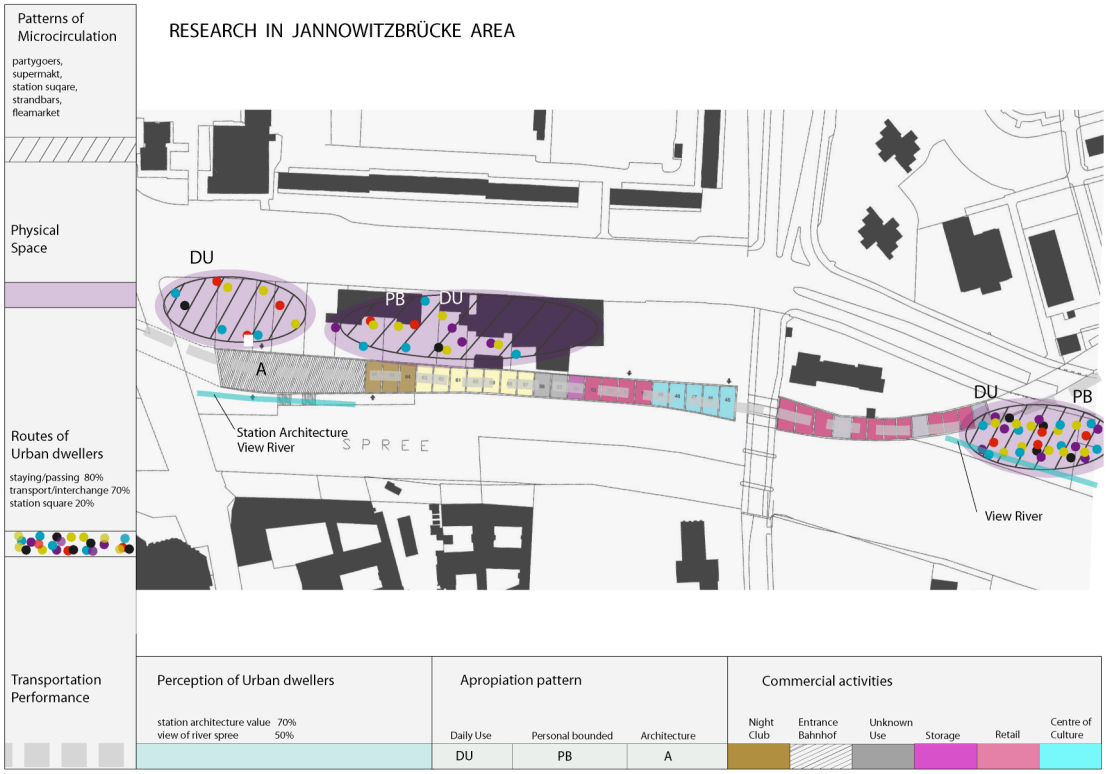


Figure 5-10 Jannowitzbrücke Area Micro-survey

CLASSIFICATION OF AREA

CASE STUDY 3: Janowitzbrücke area . The particularity of this case is that as well forming the station stucture, the viaduct flanks the River Spree towards the east. Duting Berlin's period as a divided city, the part of the Jannowitzbrücke north of the Holzmarktstasse belonged to an area of mass-housing development around the City East.

		ASPECT OF EMERGING DEVELOPMENT		
		TRANSPORTATION	SOCIAL CONTEXT	COMMERCIAL ACTIVITIES
Building Fabric	GDR mass-housing stock on one side and, across the River Spree, a tradional former Berlin industrial urban area	Transportation Performance: Layout — Interconnects the subway and the overground Stadtbahn	Physical space: Developed area of relatively low density. Image of crossing point between the districts Mitte and Kreuzberg	Activities in the area: The flea market was located in front of the arches at Michaelakirchstrasse and Holzmarktstrasse
Social Context	Mitde to low-income neighborhood	Organization — Tracks above and the station entrance on the ground floor. Cross-shaped design, with the stations underground Subway	Routes of urban dwellers: Dwellers stay or frequent the area: approximately 80% of the people passes by in the station area, 20% remain in the station square' with the supermarket.	New supermarket in the station plaza, fast food restaurant and the gas station
	Recent spatialmik resulting from a process of successive development in the conversion from industrial use to creative clusters.	Network Structure — Interconnecting station Links aboveground SBahn lines and the subway line U8	Station is used mainly as transport interchange -70%- for working people from south and east part of Berli	Temporal art performance was located in the arches, ART EXPRESS
Uses	Culture/ art workshops and festival spaces	Concentration of flows — The Stadtbahn traffic and subway line	Profile of users between 18 and 80 years. The predominant group was aged between 24 and 45 years (48% of al interviewed)	
	Car workshop and small enterprise	S5 Westkreuz station to Strausberg Nord station; S9 Spandau station to Ruphafen Berli-Schönefeld station; S7 Potsdam Hauptbahnhof to Ahrensfelde station; S75 Spandau station to Wartenberg station, subway line 8 (Westding / Tempelhof). Bus service. The station also hosts a DB Carsharing office.	Microcirculation patterns divide the area into three parts	The urban area outside of the station. — Most of the arches towards Alexanderplatz have been renovated
	Middle-lower housing		The pysical space -the lived-perceived-conceived space — Perception of urban dwellers: Majority of the respondents (70%) knows about the architectural value and appreciates the closeness of the station to the water	53% of the arches are occupied with uses such as small retail shops and restaurants, as well as car workshops
	Office (BVG Trias Building)		Expectations about the development of the shore areas with strandbars and others	
	Fast food restaurants		Conceived space: A majority of the people using the station as a point of interchange stressed the poor accessibility of the interconnection	
	Car services and Gas Stations	Bus traffic		

		QUALITIES OF EMERGING DEVELOPMENT		
		TRANSPORTATION	SOCIAL CONTEXT	COMMERCIAL ACTIVITIES
Stakeholders	Kreuzberg/Mitte Residents	●	●	●
	Local business shopkeepers		●	
	Deutsche Bahn AG		●	
	DB Station & Service		●	
	Visitors			●
EVALUATION / SWOT ANALYSES	? Strengths		Catalist for urban development Popular culture and urban potentials as incubator of urban development Mixed uses (workshop, small enterprise & entertainment, art)	Local based commercial units Affordable renting price for diverse uses
	? Weaknesses	Less conectivity of station to ist scurounding Less development of station aesthetics		
	? Opportunities	Development of Park&Ride (Intermodality)	Strong identity for the urban dwellers and visitors with buffer area and arches Development of several local micro areas Temporal uses affordable Arts environment	Buffer area with strong creative background
	? Threats		Eviction Gentrification/ loss of buffer area International developers tied to curent plans	

Table 5-3 Research on fragmented space and urban qualities: Jannowitzbrücke Area

5.4 Research discussion: The dominant station area and local micro-spaces

The previous sections 5.1 – 5.3 were organized to research single viaduct sections at the micro-level. As argued in Chapter 4 (see Synthesis 4.4), the viaduct is affected by the emerging development of 'place-making' in stations and in new urban development projects. Three elements have been associated with the viaduct development patterns, namely the transportation development, the specific urban development context and associated commercial activities. Thus, the economic focus of both the transportation management and urban emerging projects (Kranzler Eck) are shaping the viaduct development process. Predesigned commercial urban development strategies are shifting the viaduct's emerging development processes away from individual social–spatial expression.

The research aim was to reveal variations and distinguish development patterns in the arches between the three elements that are assumed to affect its development process, and to outline emerging development trends observed in the viaduct. Therefore, case studies were examined with a focus on the area around the station and the urban surroundings. Here the particular spatial characteristics of the arch space at the micro-level were studied. Based on Lefebvre's spatial expression categorizations—dominant space and appropriated space (see 2.3)—the specific question addressed was: what kind of spatial qualities does the particular area hold? Do conflicts exist between redevelopment strategy and `appropriation´ by urban dwellers, and, if so, how are they influencing the development of the arches?

Significant findings drawn from this micro research confirm the anticipated redevelopment pressure in the Stadtbahn railway space. The research further underlines that several arches and its buffer zone, which developed in the space between the Stadtbahn infrastructure and the urban surroundings, is also being affected by this process. Within this development, the research reveals differences in the dynamics between the three elements (transportation development, urban development practics and associated commercial activities). However, these dynamics are identified in the case studies as two different substantial current development fields.

The first of these two fields encompasses the significant transportation and commercial development pressures from urban development strategies, which are manifest in the area around the station.

However, the assumed urban project development strategies discussed in Chapter 4, such as orchestrating spaces in line with economic interest, a trend that affects the viaduct's previous diverse social-spatial configurations (as the case of the Kranzler Eck shows) were not apparent in the micro research in the three cases. This finding at Kranzler Eck remains a single case in the Stadtbahn line. However, this trend outside the stations demands further observation of other urban developments (e.g. Luisenstrasse/Mitte) and how the arches are being transformed.

Instead, in the the three case areas of the micro-research, a second field is revealed outside of the station's zone and development influence. In these areas, individual micro social-spatial configurations are being formed. This means areas are morphologically shaped by the transportation function of the viaduct in line with the transportation supply. Space shaped by commercial activities is adapted to the social-spatial context that the area represents. Finally, space is emerging with diverse appropriation patterns, ranging from long established appropriations to temporary uses.

A closer look into the analyses of the case studies provides the detail on these findings and reveals variations in the interplay between the three elements.

5.4.1 The dominant market: Transportation concentration, mass consumption and predesigned urban development

In the case of the redevelopment of the Hauptbahnhof area, the development emerges as a particular spatial configuration—a strategically predesigned space for specific functions based on transportation and consumption development. The development process is based on the station, and particularly on the station's interior area, and few other configurations appear in the station square or the surrounding area. Moreover, the 'traditional' station formula (see 5.2.2, 4.1, 4.4), whereby the development of a station resulted in the improvement of the station square and the surrounding area, no longer seems to be effective.

The main activities, namely transportation and shopping, are organized inside Hauptbahnhof station. Shops open their doors to the interior space and provide little interconnection between the station and its surroundings. Nevertheless, the area

shows signs of an emerging development with the new buildings in front of the station (see 5.1-physical space). Elements, which develop additional activities in the area, are the riverbanks along the Spree. However, the distance between the riverbank and the nearest buildings underlines the independent character of the Hauptbahnhof. The station and its surroundings show the development pattern of an inward-orientated area. The space appears with a 'typical' interdependency between mass transportation and commerce (see 5.1-commercial activities), as stressed by Dant and Martin in their research on shopping mall development, which is configured to a large extent by both transport infrastructure and consumption (Dant, Martin, in: Jayne 2006:103). However, the authors explain the interplay of the shopping mall with the development of the individual cars. Without cars, the shopping mall would not be accessible. Furthermore, the size of the shopping mall is adapted to the amount of drivers that spend time in the shopping space after the journey. These interdependencies between transportation and consumption apply to the functional development of the Hauptbahnhof area. Without the transportation supply and the train station function, this place of intensive consumption would not be accessible by the mass of people it requires to function. It would only be used by the smaller number of people arriving from the neighbourhood or with individual transportation. The combination of mass public transport and mass commercial shopping provides the functional scheme for the station. This development pattern suggests Hauptbahnhof as a singular enclave; the interwoven transportation-shopping space remains a detached self-referential point with its own specific functional role depending on the flow of people and the transportation schedule. The two functions—transportation and commercial development—combine to produce an inherently mono-functional and introspective space, independent and closed off from its surroundings. As the Hauptbahnhof example shows, Flagship projects at the center of the restructuring measures follow the aim of developing predesigned themed environments and commerce, which, as the case study shows, have only been developed in the station building's interior.

In this context, the nearby viaduct arches, which are still available but walled-up, are part of the non-incorporated elements in the redevelopment project. However, the development of the area is still pending in terms of transportation connectivity and the development of the station's urban surroundings. For the owners of the area (made up of different branches of the DB cluster: VIVICO, DB Deutsche Bahn AG, DB Station & Service, DB Immobilien AG), integrating the traffic and consumption configuration of the station into the local level of its surroundings seems to be a 'self' propelling but pending target.

This space can be viewed as a dominant space; dominated by the mono-cluster of the developers and strategically designed by the technological intention for transportation supply and the commercial power. Moreover, in the main, appropriation patterns stem from the users of the two main functions. The interplay in this case study between the three elements provides a transportation and commerce centered development with an urban context developed with a predesigned development strategy and negligible appropriation patterns by urban dwellers.

5.4.2 Different concepts for the urban 'passage': Integrated transportation supply, urban conflicts and commercial struggles

However, station areas with particular locally-based social-spatial developments within the viaduct structure, as the case study around Savignyplatz illustrates, are also under significant restructuring pressure, which affects the development of the viaduct. The research around Savignyplatz reveals several different micro areas that have emerged in the *buffer area* and have developed as different social-spatial configurations. These areas can be morphologically distinguished as a long strip parallel to the viaduct and arches, and an east-west street in front of Savingyplatz station, defined as Savigny Passage. The third area represents a private yard related to the activities in the school to the south, leading to the Kurfürstendamm.

The Passage around the station builds a mixed-use area in the open Berliner block structure highly frequented by both inhabitants and travellers (see 5.2.1 – Uses of the area). At the same time, this street hosts the stations 'front side' a parallel spatial configuration interwoven and comprised with the infrastructure itself, with one main side facing the square and containing one of the two entrances to the station. What links this space together is the pattern of residents' diverse activities that include workplace, gallery, school, eating places, station entrance, permanent dwelling and retail areas—a mixture of overlapping functions, organized in and through the Passage. The Passage provides functional and cultural diversity and particular atmospheres that characterize the cultural street life within the station area and in its surroundings. The arches and the buffer zone have been 'appropriated' by shopkeepers and inhabitants of the area with functions they can relate to, such as galleries, bookstores and lifestyle stores. Based on the data evaluation and the survey of the Savignyplatz area, evidence was collected that supports the strong relationship between the area's cultural and economical context and the viaduct arches. Many of the functions that characterize the area are related to the Stadtbahn's viaducts arches themselves. The arches'

particularities, such as the rich functional mix, the commercial development and the social-spatial context suggest that the identity of the area is interlinked with that of the arches. The survey reveals that urban dwellers, on the city scale and in the neighborhood, have an intensive relationship with the arches and identify them as Savignyplatz (see. 5.2 – Urban dwellers' perception).

However, not only the identity is interlinked with the arches—the 'place-making' in the area is also deeply intertwined with this space. The Passage is undergoing a transformation. Due to the developers renting policies and increasing rent prices, 50% of the businesses in the arches that comprise the Passage have closed down in the last nine months. While the other shopkeepers regret the loss of activity in the arches and identify it as a loss for their own businesses and for the integrity of the surroundings, the transport management sees the development of the arches from a different perspective: the viaduct should have the *appearance* of a station space in particular. A significant social-spatial redefinition in the station area is being targeted. In the description of street activities, Lefebvre (1989), but also Jackson (1998), refers to sites '*that embrace different social articulations'* (Jackson 1998 in: Jayne 2006:139). They suggest that the street can be regarded as a lively, appropriated and contested public domain, while stressing that it can also be the site of popular activities and cultural developments that are influenced and proliferated by commercial interest. This case represents an intermediate stage, the micro-view of the conflictive field—between appropriations, as active and successive forms of the space development process, and domination. In this case, there is conflict between the consolidated local micro-area and the strategic `place-making´ of commercial developments around the station area. The restructuring of the stations could also be seen as an expression of gentrification: those with overriding economic interests appropriate the configured space, which is then increasingly heirarchized. Nevertheless, the setting of the Passage with its arches still shows an urban transportation space as a constituent spatial and social development on the micro-level. Here the interplay of the three elements shows an integrated transportation development, with locally based commercial activities and a broad range of `users´ and `actors´. There are diverse appropriation possibilities that influence the development of the space. The Passage with the arches needs to be further researched. It remains to be seen how the area will be transformed after several

iconic arch uses[126] that constituted the active character of this neighborhood —Arno lamp store, the Galleries and the Aedes café and gallery—have gone.

Although the case study on the Savignyplatz area reveals the redevelopment pressure of the developers, the arches and the buffer zone still shows diverse locally developed micro-urban areas, such as the Savigny Passage. The Passage remains a space for walking alongside the train line, with several commercial activities in the arches dependent on local circumstances and clients, as explained. It is mainly visited and appropriated by inhabitants of the area and displays their development pattern for the buffer area within the open Berliner block structure and the arches.

5.4.3 Appropriation of space by creative and small-scale entrepreneurship: Transportation supply, diverse spectrum of commercial uses and temporary urban context

The characteristics outside of the station as diverse expressions of a buffer area between the viaduct and the building structure can be further underlined with the third case study, in the Jannowitzbrücke area. The emerging development of the arches shows sections of parallel development, fragments whose appearance and social and spatial characteristics depend on the approaches to it. In this case, urban dwellers developed these areas around and in the viaduct arches with diverse and temporary use patterns.

However, with the limited development of the station square and the closed arches accessible only from the station, the survey underlines the lack of interaction between the transportation station and the adjacent areas. While the urban surroundings are experiencing a growth in cultural activities but also a pending gentrification processes driven by international investors, the station—a protected monument and ‘vis a vis’ the River Spree—remains relatively untouched by this development, in contrast to its viaduct structure. Inside the station, DB is holding space for company internal use and the small numbers of additional commercial activities, which are concentrated on covering the needs of the passengers, are all orientated towards the inside of the station and defined by train and subway timetables.

[126] identified as iconic from the research on the particular area Savignyplatz, but also from the research on Berliners’ perception of the arches in Chapter 4

The station, its surroundings and the viaduct have their own functional arrays and are distinct entities. The station remains the space for arrivals and interconnections, and is used by the visitors as an access point to the area. However, activities in the arches and the buffer area suggest that possibilities have arisen that go beyond the timetable-bound commercial activities in the station. It shows the space is proliferated by the emerging urban phenomena of the surroundings, with a mixture of new venues for entertainment culture instigated by the young Berlin art scene and small-scale commercial and workshop units. The buffer zone between the viaduct and the Spree, a largely overlooked intermediate space, provides the setting for emerging outdoor activities (See 5.3 - Uses of the space). Although these activities are temporary, they have the power and potentials of space 'diversion', as Lefebvre stated in the case of *'Les Halles Central in Paris'*. The transformation is the physical result of the active appropriation of space by new cultural development (Lefebvre 1991:163). These activities are closely related, as seen in the case of the Strandbars, temporary galleries, flea market and art performances, to popular cultural[127] of the specific local urban context. This process shows the innumerable transformations of urban space possible through popular culture and 'festival space'. Temporary uses emerge in the outdoor, non-defined space of the buffer area, as groups (e.g. *Bar 25* interview) explain because space is available and attractive with the water and the railline, the rent is still relatively cheap and there is still no pressure to produce commercially viable business models. Along with the additional mixed uses, the cultural developments have transformed the area into a series of specific places with their own strong identities and attracted locals and visitors. This development suggests social- spatial configurations encompassing alternative use patterns, which emerged through the urban dwellers' use of tactics. They appropriated the space to further their interests. This case provides the interplay of the three elements—the transportation supply, mixed small-scale commercial activities and temporary and mixed uses with a broad spectrum of 'users' and actors with diverse appropriation patterns.

However, urban youth and subcultures are also underpinned by urban economic dynamics and their lifestyle is incorporated into profitable economic viability models with gentrification and designed cultural enterprises. Therefore, the research needs to

[127] 'Popular culture' as concept is defined by the work of Lefebvre (see p. 40) and refers further to the work of Adorno/Horkheimer (1973:98 – 114)

envisage how the future urban development, which is still in the planning process, will change this area.

Arches and buffer area as social-spatial gray zones

To summarize, from the research on the three case studies, the main findings can be summarized as follows: the interplay between the transportation development and urban practices and associated commercial activities reveals variations and specific dynamics. The strategically designed transportation and commercial development in the station area contrasts with other viaduct sections that exhibit a broader spectrum of users and actors and their appropriation patterns and locally adapted forms of commercial development.

However, the findings of the case studies reveal that the development of the viaduct and its arches is in a planning 'gray zone'. The role of the viaduct and its arches has remained hidden and largely ignored in the transportation and urban planning agendas for the Stadtbahn space (see. 4.3.1). In addition, the temporary uses and unplanned structures found in compromised zones, such as the *buffer area*. Nevertheless these unplanned structures enhance the buffer zone's diverse social-spatial potentials. This understanding strengthens the already illustrated transformation process, whereby urban dwellers' appropriation patterns create areas with specific social-spatial characteristics and identities. In this context, it has been shown that viaduct spaces exhibit strong and manifold social potential. As the case studies reveal, their development may depend on the adjacent area, but they also have the power to attract visitors and actors, including commercial ones, and act as catalysts of urban developments and economic interest (see Jannowitzbrücke). However, this gray zone status is also endangered by both, developers or the private structures that manage the transportation space and the auxiliary areas, as the viaduct and arches in the station area show. The arches are either walled-up or become large-scale privatized and monopolized projects in the public (transportation) space of the inner-city. In this context, the relationship between the various actors, users and stakeholders can be described as ambivalent, contradictory and marked by tension. However, as the case studies show, associated commercial functions are crucial in determining the development patterns and their diversity and, ultimately, their spatial configurations. The Stadtbahn transportation space also appears as places in which the diverse social and spatial restructuring of Berlin's inner-city is materialized.

6 CONCLUSION: THE URBANIZATION OF THE STADTBAHN SPACE REPRESENTS MORE THAN THE DEVELOPMENT OF THE STATIONS

Through historical research and contemporary empirical analyses of the viaduct and its arches, which was contrasted with analyses of the station, this research has revealed the 'role' of the Stadtbahn in the production of urban space in Berlin

It is evident from historical (see 4.1 - 4.2) to contemporary developments (see 4.3) that the space emerges as hybridization of social-spatial configurations, processes shaped by different forces, their conflicts and negotiations. History shows spatial developments that were processes created by significant social conflicts, spatial ruptures and reconfigurations. The Stadtbahn's development spans its implementation in the late nineteenth century, its partial destruction during the time of the Cold War and its recent restructuring.

From the micro research it is evident (see 4.4, 5.4) that the *Stadtbahn*, the viaduct and its arches display diverse social-spatial configurations developed from urban conflicts that have been significant for its appearance beyond that of the orchestrated stations, station square and surroundings (see 4.4 - Synthesis). A wide range of actors, such as transportation companies, planners, developers, investors, arch renters, inhabitants and users, build the space as diverse fragmentized conglomerations of uses and forms. This process could be proven not to consist of isomorphic spatial configurations: spaces emerge with individual social-spatial processes and identities (see 5).

It could be further evident that the three elements of transportation development, urban practices (specific urban context) and associated commercial activities are central to the emergence of space as hybridization and fragmentation. The space around the line—the *buffer area*—is morphologically shaped by the railway viaduct and its arches, which provide the transportation supply. Moreover, the space develops through an urbanization process. Transient spaces emerge, resulting from conflictive

heterogeneous social processes. The urban transportation space constitutes a palimpsest: a series of overlaid approaches constructed at different historical moments (Lefebvre 1991; Harvey 2000; Koolhaas 1999). Finally, it is a space shaped by associated commercial activities and their dynamics (Weber 1956; Castells 2001).

Therefore, the railway space is certainly more than its transportation function. Due to the revealed interplay between the three elements, a more comprehensive definition of the urban transportation space needs to be considered. Urban railway space developments are requested to account for its potentials as a 'producer' of transportation–social–commercial spatial configurations. Furthermore, it can finally be concluded that *urbanization* is at the center of the space production and the urban dwellers' appropriations of the infrastructure and the appropriation patterns revealed in this research may carry the potential to account for the way this space is emerging in terms of social-spatial qualities.

If we firstly accept this broader definition of urban railway space, and secondly accept that the space represents urbanization processes, what does this mean for the theory? This chapter is organized to reflect on this research work's empirical findings and their relevance to the theoretical background of this research.

6.1 Reflections on the transportation-commercial – spatial configuration

Railway space firstly needs to be intrinsically analyzed in terms of transportation development, urban space production and commercial dynamics. Secondly, accounting for transportation space qualities means positioning urban dwellers' opportunities to appropriate the space for their needs at the center of the analyses. The theoretical implications can be drawn as follows:

Challenges for transportation models to integrate 'locally' flows in the urbanized space

In transportation planning, special emphasis has been placed on the design of the network structure. There has been a shift from a focus on extending infrastructure networks as *Überwindungsleistung* to current *´integrative transportation planning´* efforts. This approach focuses on the transportation 'hub's' expected ability to serve the interconnectivity between people and commodities (Florian, Harpenau 1998; Depuis

2004), and between important areas of business and trade. Meanwhile transportation planning is also calling for a reevaluation of customers' needs to provide a suitable transportation supply development (Blana 2003; Kutter 2005). However in spite of the great efforts put into designing new transportation models, the research of the Stadtbahn in fact shows that there seems to be misinformation among urban dwellers about the transformation of the transportation network. The survey evaluation established that dwellers do not make full use of the concentrated network system or its network hub *Hauptbahnhof* in terms of the forecast intermodality and related Park & Ride possibilities (See 5.1).

Even in a city such as Berlin where a high percentage of respondents cited public transportation as their first choice of transportation, urban dwellers do not seem to be familiar with the redesigned stations or the network's transportation supply potentials (See 4.3.1). This may simply point out that some people are less informed than others, but it also points out that improvements to new transportation models in the urban context do not necessarily reach user profiles in domestic terms. In fact, to the great confusion of urban dwellers the main hub is still not connected to the tramlines covering the eastern area of Berlin. In addition, the newly built subway line U55 is still not incorporated into Berlin's existing subway network, apart from its connection with the intermediate surroundings of Tiergarten and Mitte. Finally, the polycentric structure of Berlin also works against the centralized network design because the urban fabric around the newly defined center does not provide adequate density or passenger numbers to be effective in terms of accessing the network and the main point of interchange.

The Stadtbahn case shows that the implementation of transportation models is challenged by the local integration of flows and that urban reality is more complex than a predefined functional model. It requires an evaluation of the customers' profiles and their daily life routes as well as the flexibility to adapt to local urban realities. Therefore, the consequences of the social dimensions of transportation development as criticized by urban research (Smets 2000; Marvin, Graham 2001) have still not been taken adequately into consideration in transportation planning circles. Aspects such as the inclusion of social-urban configuration criteria and reflections on the impacts of urban transportation infrastructure systems remain unexplored. In this context, as the Stadtbahn case presents, the antagonistic attitude between transportation planning and urban development needs is blocking the achievement of integrative cooperation.

However, in this context, the Stadtbahn case research carries the potentials for further differentiations on the nature of transportation project development. In social studies, transportation project problems are assumed to derive from low participation in the planning framework and sector-based approaches. In the case of the Stadtbahn's development, attempts were made to overcome the sector-based approach by incorporating a broader spectrum of actors, such as the railway company, planners, architects, engineers and local authorities (see 4.3.1), into the planning process. Regardless, struggles during the project development and later during its realization made the project complex (see 4.3.2). This could be explained due to the disadvantages of transportation planning related to particular terms for the development nature of the railway: the railway system requires an inbuilt anticipatory function that determines functional parameters beforehand based on a high pattern of forecast development. Additionally, privatized structures and a commerce-based decision-making process with a focus on profitable outcomes altered the realization process.

Therefore, this case explains that even when the planning shows integrative approaches, adequate communication between different stakeholders and interest groups during the project development can be hard to maintain. Hence, with both its own particularity of anticipated development and a speculative position towards the building of the project, the implementation of the planning proposal, as the Stadtbahn revealed, became a subject of greater complexity and myriad difficulties. Development process approaches that incorporate reflections on intermediate controls and management structures seem to be relevant as other cases studies reveal (see 2.2.3 e.g., Utrecht City in the Netherlands) and aid an appropriate realization of the project.

Railway space as hybrid and socio-economic activities in the urban space

The *Stadtbahn* provides a deep understanding of the active role that commercial activities play in the railway space. Through the research, it has been evident that commercial activities stand as a third element in configuring the transportation space. The *Stadtbahn* study reflects the development of the transportation space and the accompanying market development, which has been a permanent aspect of the development since its inception. In this context, additional commercial functions seem to be defining factors in order to firstly overcome standardized and uniform

transportation spaces and to develop diverse spatial configurations. Secondly, the study seems to show that the additional commercial activities are essential for a qualitative transportation space development and play an important role in overcoming the dreaded 'marginalization' of the railway and creating an 'integrated 'station area.

Creating an address through commercial development: Grand Central is not a Shopping Mall

Because the railway space is not only a transportation conduit with a transportation function, a reflection on its socio-economic functionality and potential for creating addresses in the urban space needs to be made. As other examples show, there are also economic concepts behind railway redevelopment strategies that target a particular spatial configuration through commercial activities. It could be a reactivation of a prominent urban area, as the Grand Central example shows, in which the high level commercial activities are suited to the surroundings. In Zurich the emphasis was placed on a mix of 'alternative' commercial activities in the viaduct arches in the inner-city (see 2.2.3 *IM VIADUCT* / Zürich or *Grand Central* / NYC.) In this context, the *Stadtbahn* stations show a more uniform commercial development tendency. However the viaduct arches have developed specific local identity building structures, which are now threatened by the uniformity brought by the successive development of commercial models, as seen in the cafes and restaurants at prominent locations such as Savignyplatz. Moreover, the current economic discourse regards developments based on place-specific characteristics as essential. They carry a unique potential for economic development and are becoming increasingly significant for the development of the urban space. Inner-city urban development in particular is surrounded by the growing competition between cities regarding space specifics as essential for tourist-oriented development (Porter 2000) and creative industries (Florida 2005). But at the local level these means also that this areas also contribute to the socio-economic development of unique social-milieus and popular culture. In this context the revealed planning 'gray zone' that the viaduct presents questions the business models and their contribution to the successes or failures of the railway space in terms of socio-economic developments of local space.

'Flagships' are not always Flagships

The Stadtbahn provides a deep understanding of the development and emerging strategies in Post-Fordist developments such as 'Flagship' projects in terms of social-spatial 'production' and power relations. The research points to a shifting field of social-spatial redefinition that relates to the 'production' of space in Post-Fordist development and urban entrepreneurship, such as the specifics of 'place-making' and the strengthening of place-bound relations for commercial uses. However as revealed from the research, where 'place–making' is applied to catalyze development, it has nothing in common with the theories of 'place-making' (Florida 2005), which entails a general summarized 'orchestrating' of space for commercial uses. Instead development concepts are strongly bound, as the survey illustrates, to the viaduct and its role in emerging urban development from the perception of selected developers, their estimation of how a profitable space needs to appear and privatized development structures. In this context, Lefebvre's theory of dominant space was more supportive in understanding the ongoing process than that of a 'general' orchestrating of space. He explains that the regulation of space is driven by privileged social groups imposing their idea of space on the environment, accompanied by a low degree of participation, and privatized structures (Lefebvre 1991).

In this context, countless privately owned or managed Stadtbahn spaces exist (viaduct arches, passages, stations), but their functions and services are related to the public and depend on public accessibility. However, as revealed, viaduct spaces and buffer areas are caught between the economic potential of the space and their function as communal urban space. Here the social discourse on the special role played by publicly accessible spaces for the social-spatial quality of life in the cities and their city-wide and societal significance in terms of sustainable development should be mentioned (Marvin,Graham 2001; Sennett 2001). In addition, the structures of reference projects show that parity in the social-spatial structures was only achieved through the integration and participation of local stakeholders and local authorities. (see 2.2.3 in *High Line* and *Promentade Plantée*). Therefore, it can be assumed that flagship projects are not independent developers realized in the same manner. However, their success may depend on balanced power-relations in initiative-based urban transportation space design.

6.2 What is an urban transportation space today?

The Stadtbahn case seems ideally situated to advance on the understanding of inner-city railway space as a crucial site for Post-Fordist development (see 5). Many cases of recent railway redevelopment can be observed where the focus of urban regeneration strategies has been on central urban areas of cities in Europe and North America. In this redevelopment context, the Stadtbahn represents a case where significant restructuring was undertaken in the areas of transportation network and management structure, urban space development and associated commercial activities (see 4. 3, 5). As seen in the early 1990s, the Deutsche Bahn AG, national and local authorities, engineers, planners and architects embarked on a fundamental social-spatial redefinition of the railway space, as defined in the '*Renaissance of the Railway Stations*' and the accompanying *Planerk Innenstadt* planning guidelines (see 4.3.1).

Railway space as a historically bound socio–economic-physical construction

In recent planning proposals, the railway space appears as a space where many social and economical expectations are vested. Huge credit and trust in the beneficiary outcomes of railway space redevelopment for the city is provided by the complementary strengthening of political institutions—in this case, the German state and local Berlin authorities. However, the resulting 'entrepreneurship' and financial support from the public sector of the redevelopment process also evidence a historically bound selective vision of the transportation system. 'The Renaissance of the Railway Station' and other redevelopment strategies clearly point to the prosperous development of the railway space in the nineteenth century, when the railway guaranteed positive urban development and social and economic growth.

As this research work reveals, it is true that the *Stadtbahn* has been massively involved in the development of the industrial city. It has reconfigured its inner areas, thereby strengthening the industrial development of the city, and the station was intrinsically associated with the development of important social-spatial commercial configurations in Berlin. However, at that time the *Stadtbahn* was the subject of controversial debates including optimistic socio-economic hopes on its development, but also regarding building cost underestimations and the lack of transparency in its building process. Secondly, history reveals that Stadtbahn stations, their squares and surroundings have 'produced' orchestrated socio-economically desirable 'front' sides accompanied by ´rear` sides in the stations and along the railway line—parcels of marginalized areas of

the industrial society. They were social spaces associated with the lower classes and not to the prestigious socio-economic development of the railway space and orchestrated city development. Hence, the Stadtbahn's history reveals that the railway is an ambiguous 'developer' of urban space as researchers of other railway stations account (Bertolini 1996). The railway space is not free of conflicts and therefore should not be idealized.

However, in this context, there is much to learn about the Stadtbahn case. The line and the viaduct arches have enabled a broader spectrum of actors and users to benefit from the railway development through diverse opportunities to participate in the railway development in the urban space.

Concentrated transportation and commercial spatial construction with lower density impact

In spite of the retroactive approach to the Stadtbahn redevelopment, contemporary agents of change can be found in the railway space. Firstly, the Stadtbahn situated in today's inner-city of Berlin passes through areas where urban regeneration strategies, such as the 'Urban Renaissance', have attempted to increase the density. In this context, the transportation space is not only expected to provide the transportation supply. The railway space has to deal with 'forecast' increased flows of mobility and demand for transportation integration and intermodality in concentrated network hubs, such as renovated stations, while simultaneously meeting the urban development aim of 'creating' urban space of higher quality. Whereas in its nineteenth century heyday the *Stadtbahn* railway space meant radical spatial enlargement through its transportation networks, social-spatial configurations have recently developed at specific points making the *Stadtbahn* part of new place-making initiatives aimed at intensifying inner metropolitan areas as part of the polycentric geography of emerging urban development.

Secondly, stations and arches near stations appear to have been strategically designed to meet demands for service and commercial activities as part of emerging redevelopment initiatives (see 5.4). However, this proposal may be not a new development resulting from pressures on the station area and a new socio-economic drive—the station was a highly contested and desirable space and an important socio-economic location during its historical development in industrial times. Nevertheless, the station has recently reappeared, as seen in this research, with a high proliferation

of mass consumption in its inner area. In the shift away from massive transportation network extension towards the concentration on transportation and consumption development at designated points, the Stadtbahn station has been converted into an enclosed spatial transportation-commercial typology. Accompanied by limited access from the station inner area to the station square, the station is not well incorporated into its urban surroundings (see 4.3). In addition, station squares (Schievelbusch 1986; Bodenschatz 2009) and the nearby viaduct arch spaces, with their ability to interact with their urban surroundings and to extend the station's area of interconnection, are secondary redevelopment targets and their potential remains relatively untapped. In the case of the viaduct, the redevelopment of the station may even represent the destruction of the structure in favor of a new station design.

Thirdly, the historical 'station formula' evidenced that commercial activities increased around the Stadtbahn stations due to the good transportation access. This process was further determinant for the increase of land price value around the station (Ahlfeld, Wendland 2009) and was a catalyst in the development of highly prestigious socio-economic configurations and urban densification in Berlin. Today's redevelopment has had a weak impact on real estate markets and the increase in property values around redeveloped stations remains an unkept promise. Therefore, as this work illustrates, the 'Renaissance of the Railway Station' redevelopment process has had a limited capacity for bringing important economic and social actors together, in contrast to the promoted historically-grounded expectations.

Finally, this research has shown that a reliance on historical automatism and 'traditional' models can only be applicable to a certain degree in the railway space redevelopment. As revealed, new railway stations are not an imperative solution for creating urban density or catalysts for the redevelopment of surroundings areas. There are no rules that can be applied whereby the refurbishment of a station automatically results in the improvement of the station square or the surrounding area. Instead, as also seen in other station areas of the Stadtbahn space (e.g. case of Savignyplatz) development policies need to provide additional attention with a broader spectrum of actors for a proactive development. However, the consequences of missing opportunities during railway space redevelopment and failing to capitalize on existing potentials may be obvious as the railway company questions how to cover the redevelopment costs. A recent solution seems to lie in the massive proliferation of additional commercial uses in the stations. Drawing on the strongly interwoven process between mass transportation and mass consumption, 'integrated' consumption

strategies have been applied to the station, whereby consumption and transportation simultaneously build the basis and reason for development, (see 5.4). The station appears as a site of mass consumption in the inner-city and active viaducts in station areas are being saturated with profitable business models, such as cafés and restaurants.

The Stadtbahn as a laboratory for learning about the process of urban space production

The Stadtbahn space is a place for learning a lot about the 'production' of urban space. A close relationship exists between the viaduct, its arches, *passages*, temporal used space and *buffer areas* created between the Berlin block structure and its immediate surroundings. It has produced innumerable different settings in the inner-city of Berlin and certainly, therefore, the urbanization of the railway space represents more than the development of the station. The territorial expansion of the urban transportation space seen by the Stadtbahn, sets a standard for the idea of interaction of infrastructure lines with their spatial environment.

The morphology of hybridized space

The railway line with its arches partially morphologically reconfigured the inner-city of Berlin by breaking through the Hobrecht plan with its strict division of orchestrated public area and private inner block space. However, not only the viaduct structure was convenient for the development of an intensive relationship between the transportation system and the urban context. In the case of the Stadtbahn, the direct interchange between the viaduct arches and the first floor arrangement provided by the Berliner block structure is also convenient in Berlin's inner-city. The public ground level marks the urban pedestrian zone and the installed Stadtbahn system shows an outline adapted by the arches suitable for additional uses within the viaduct. In this research, the shapes of the arches and the station architecture are seen as supportive of the interaction. The assumed hybridization of space is revealed from its morphological standpoint (Angélil, Klingmann 2000; Koolhaas 1999).

Since the implementation of the Stadtbahn in Berlin, the viaduct's signature arches and the created *buffer areas* have provided alternative and diverse uses in the urban environment. The study shows a clear interaction between the railway space and the development of the urban space through the formation of spaces for communication,

trade and temporary cultural activities. Today, the Stadtbahn viaduct illustrates different social-spatial development processes and their spatial manifestations, ranging from long-consolidated appropriations of arch spaces by urban dwellers to temporary space uses by the urban popular culture. Within this broad spectrum, the Stadtbahn largely overcomes the idea of 'non-space' which scholars (Augé 1994; Foucault 1968) use to describe transportation space due to its limited functional development. Urban dwellers have, as revealed from the research, a strong perception of the Stadtbahn. The transportation space is not only defined by means of its function as a transportation provider, and the urban relationships are not limited to locations in the stations and their squares. The active incorporation of more actors and diverse activities in the arches promotes the building of identities attached to the railway space. City dwellers build relationships with the transportation space in their daily routine and through the appropriation of 'left space' or *buffer areas* for their diverse urban activities, giving the space multiple identities.

'Subculture' and popular cultural development and their power to produce space - the buffer area

This research reveals that because planning initiatives have not specifically targeted the development of the viaduct and its arches, they are in a kind of planning 'gray zone'. However, the research also illustrates the civil sector's potential to 'produce' space in the viaduct and the buffer area outside of the station. Here space has emerged for diverse uses, from block back yards to festival areas and workshops. However the arches and, as seen in recent developments, buffer areas have been historically associated to the art movements and popular culture in Berlin. In this context, and with special reference to the buffer area, unplanned spatial developments are emerging for the popular culture that are essential to its development process and potential to develop beyond the immediate surroundings (e.g., buffer area Jannowitzbrücke). Certain buffer areas have been shown to be catalysts for new urban development, with unplanned participatory processes, temporary uses and outdoor activities. The railway line therefore shows the workings of place specific dynamics in the development of areas in Berlin.

Finally, however, the gray zone shows a broad spectrum of different social-spatial configurations. As seen in the case studies, this inner-city area is also in danger of becoming privatized and monopolized by the railway management or investors. Therefore, through the railway space development, the Stadtbahn also provides an

understanding of the complex dynamics of urban social-spatial changes in Berlin's inner-city. Moreover, the research raises questions about Post-Fordist development leading to complex social-spatial configurations and space appropriation—a highly contested field in recent urban development processes.

Outlook: Perspective for further research

Although the redevelopment of the railway space has been related to historical development models that have been shown to be applicable only to a certain degree in this research, this research calls for the 'production' of space to be put in a central position of the urbanization process. This positioning may also be a potential starting point for further research. In terms of space development, imagination and memory are believed to be correlated (Appadurai 1998). In this context, complementary research could reflect on the mind set that has furthered the development of the railway space.

Firstly, however, social relations are not only built along the line and the stations. As studied in the survey (see Annex - IMAC) sociability is also at work inside the carriages. Considering the number of Berliners traveling in these carriages daily, they remain an area of research on the meanings of today's urban railway space.

Secondly, in this research it has been shown that urban renaissance aims and railway redevelopments have been shown to favor selected historical points, while others are deemed irrelevant or better forgotten. In these terms, the correlated results that this thesis work provides can be evaluated for further research. A result obtained from the historical research, which lies outwith the research scope of this thesis but is worth mentioning in terms of a critical positioning towards the history of railway development, is the significant difference between the Stadtbahn areas in East and West Berlin. As observed in plans and the competition outline (see 4.2.1 '*Berlin- Hauptstadt der DDR*', 1959) a close connection between urban transportation development and urban space development can be assumed and the Stadtbahn was actively incorporated into the planning agenda of the GDR for East Berlin. Observations on the development of the stations Alexanderplatz, Friedrichstrasse and especially Ostbahnhof as the 'main-station' for East Berlin, create the impression of an integrated development and show less evidence of station marginalization than seen in the West part of the city. Further research may challenge the three development steps generally associated with the railway space in Berlin's history: the assumption that the railway had its heyday in the

nineteenth century, was marginalized during the Cold War and was recently redeveloped based on its past glories.

Thirdly, the research on personal mobility showed a distinctive development of intensified mobility forecast for business purposes. Mobility patterns found in the research show cases of increased gender-specific mobility, such as increased female mobility for domestic reasons. In this context, the gender-specific mobility challenges the business-related concept expected to meet the development of new transportation models and supply. Finally, this point additionally reveals that a lot of myths are interwoven with the railway space. Therefore, these three anteceding ideas would be challenging starting points for further research.

REFERENCES

Adorno, Theodor; Horkheimer, Max (1973), The Culture Industry: Enlightenment as Mass Deception, Continuum International Publishing Group

Ahlfeldt, Gabriel; Wendland, Gerhard (2009), Looming Stations: Valuing Transport Innovations in Historical Context, Economics Letters, 105(1), 97-99.

Ahrens, Gerd-Axel (1984), Planung städtischer Verkehrsnetze, Technische Universität Braunschweig

Alfaro d´Alencon, Paola (2007), Seminar on: Shared Space, Neugestaltung der Schöneberger Linse um den Bahnhof Südkreuz, Studio Class 2006/2007, TU-Berlin, (unpublished)

Alfaro d´Alencon, Paola (2008), Seminar on: Shop & Rail 1+2, Die Stadtbahn und ihre Interaktion im Stadtraum, Studio Class 2007/2008, TU-Berlin (unpublished)

Alfaro d´Alencon, Paola (2009), Seminar on: Mobility means Prosperity, Case study Berlin: The Development of Urban Transport Infrastructure in the Urban Space, Research Seminar 2008/2009, TU-Berlin (unpublished)

Allen, Stan (1999), Infrastructural Urbanism, In: Points and Lines: Diagrams and Projects for the City, New York, Princeton Architectural Press

Angélil, Marc; Klingmann, Anna (2000), Hybride Morphologien. Infrastruktur, Architektur, Landschaft**,** Berlin, Daidalos 73

Appadurai, Arjun (1996) Modernity at Large: Cultural Dimensions in Globalization, Minneapolis, University of Minnesota

Appadurai, Arjun (2005), Modernity at Large: Cultural Dimensions in Globalization. 7th ed. University of Minnesota Press

Arbeitshefte der Berliner Denkmalpflege (1984), Die Bauwerke der Berliner S-Bahn, Berlin, Wissenschaftsverlag Volker Spiess GmbH

Ascher, Francois (2004), Les sens du mouvement: modernités et mobilitiés, Paris*,* Èditons Belin

Augé, Marc (1982), The Anthropological Circle, New York, Cambridge University Press

Augé, Marc (1994), Orte und Nicht-Orte Vorüberlegungen zu einer Ethnologie der Einsamkeit, Frankfurt am Main, S. Fischer Verlag.

Augé, Mark (1995), Non-Places: Introduction to an Anthropology of Supermodernity (Cultural Studies), New York, Blackwell Publishers

Aust, Bruno; Stark, Ulrich (1992), Die städtebauliche Entwicklung Berlins seit 1650 in Karten, Berlin

Beck, Ulrich; Sennett, Richard (2007), Tragische Individualisierung, Kulturmaterialismus, Blätter für Deutsche und Internationale Politik

Baccini, Peter; Oswald, Franz (2003), Netzstadt: designing the Urban, Basel, Birkhäuser Verlag

Baudrillard, Jean (2000)**,** in: Soja, Edward. W. (2000), Postmetropolis- Critical Studies of cities and regions, Oxford, Blackwell

BDA, DB AG, DAZ & Meinhard von Gerkan (Edit.) (1997), Renaissance der Bahnhöfe: Die Stadt im 21. Jahrhundert, Braunschweig/ Wiesbaden, Vieweg Verlag

Berlin und seine Eisenbahn, (Chronical of Berlin and its rail roads), 1846-1896, in: Arbeitsgruppe Berliner S-Bahn (Edit.) (1984), Die Berliner S-Bahn, Berlin, Ästhetik und Kommunikation Verlag

Berliner S-Bahn Museum (Edit.) (1998), Die Stadtbahn- Viadukt mitten durch Berlin-Baugeschichte von 1975 bis Heute, München, Signal Sonderausgabe

Bertolini, Luca (1996) Nodes and places: complexities of railway station redevelopment, EuropeanPlanning Studies, 4:3, 331 - 345

Binger, **Lothar** (1984), in: Arbeitsgruppe Berliner S-Bahn (Edit.) (1984), Die Berliner S-Bahn, Berlin, Ästhetik und Kommunikation Verlag

Blana, Evi (2003), Verkehr und Raumplanung, Berlin, ortal Lahrmaterialien zu Stadt-und Regionalverkehr

Boberg, Jochen; Fichter, Tilman; Gillen, Eckhart (1984), Exerzierfeld der Moderne: Industriekultur in Berlin im 19. Jahrhundert, München, C.H. Beck Verlag

Boberg, Jochen; Fichter, Tilman; Gillen, Eckhart (1986), Die Metropole: Industriekultur in Berlin im 20. Jahrhundert, München, C.H. Beck Verlag

Bondy, John A.; Murty, U.S.R (1976), Graph Theory with Applications, London, Elsevier Science Ltd. Publisher

Borgelt, Christiane (1988), Miethaus im Wandel; S.T.E.R.N, Gesellschaft der behutsamen Stadterneuerung Berlin mbH

Bourdieu, Pierre (1984), Distinction: A Social Critique of the Judgement of Taste, Cambridge, Harvard University Press

Bourdieu, Pierre (2005), in: Macher, Hans Jürgen (2007), Methodische Perspektiven auf Theorien des Sozialen Raumes, Neu-Ulm, AG SPAK Verlag

Bourdin, Alain (2002), Anthropologie de la Mobilité, Nantes France, Institut Francais d´Urbanisme

Brandes, (1984), in: Arbeitsgruppe Berliner S-Bahn (Edit.) (1984), Die Berliner S-Bahn, Berlin, Ästhetik und Kommunikation Verlag.

Brinkerhoff, John (1996), Roads Belongs in the Landscape, In: A sense of place a sense of time, New York; Yale University Press

Buchanan, Ian (1996), Michel de Certau, Tasmania, SAGE Publications

Bundesministerium für Verkehr, Bau und Wohnungsbauwesen (2004), Mobilität in Deutschland, Berlin, infas Istitut für angewandte Sozialwissenschaft GmbH

Bundesminister für Wohnungsbau und Senator für Bau- und Wohnungswesen (Hrsg.) (1957), Hauptstadt Berlin. Planungsgrundlagen für den städtebaulichen Ideenwettbewerb. Berlin, 1957

Bunschoten, Raoul (2005), CHORA: from Matter to Metaspace, Wien, Springer Verlag

Cascetta, Ennio (2001), Transportation Systems Engineering Theory and Methods, Dordrecht Holand, Springer Publisher

Castells, Manuel (1996), The Information Age: Economy, Society and Culture, Volume 1: The Rise of the Network Society, Oxford, Backwell Publishers

Christiaanse, Kees (2004), Design and Strategies in Urban Space, Zürich, Script Urban Design

Dant, Martin (2006), in: Jayne, Mark (2006), Cities and Consumption, Abingdon UK, Routledge

David, Clark (1996), Urban World - Global City, London, Routledge

Declève, Bernard (2004), Scènographie des projets d´espaces publics urbains, in: Les Chiers de L´Urbanisme n° 48- 49, Louvain-la-Neuve Belgien, Université Catholique de Lovain

de Certeau, Michel (1984), The practice of Everyday Life, London, University of California Press

Delanty, G & Jones, P.R (2002), European Identity and Architecture, European Journal of Social Theory 5

Deutsche Bahn AG (1996), Geschäftsbereich Personenbahnhöfe, Frankfurt a.M, DB AG

Dittfurth, Udo (Edit.) (1993), Strecke ohne Ende, die Berliner Ringbahn, Berlin, GVE Verlag

Dijkstra, Rients; Hashimoto, Shinobu (2001), Chip City, in: The Berlage Institute report (2002), Hunch N° 5, Rotterdam

Douglas, Victor; Shaw, David (2001), The post –industrial city, in Paddison, R (ed.) Handbook of Urban Studies, London, SAGE Publications Ltd.

Dürr, Heinz (1997), in: BDA, DB AG, DAZ & Meinhard von Gerkan (Edit.) (1997), Renaissance der Bahnhöfe: Die Stadt im 21. Jahrhundert, Braunschweig/ Wiesbaden, Vieweg Verlag

Echenique, Marcial (2001), Cities for the New Millennium, London, Routledge

Eichstädt-Bohlig, Franziska (2007), in: Burdett, Ricky (2007), The Endless City, Berlin, Phaidon

Engartner, Tim (2008), Die Privatisierung der Deutschen Bahn. VS Verlag für Sozialwissenschaft

Engel, Helmut (2004), Baugeschichte Berlin. Band II. Umbruch, Suche Reformen: 1861-1918. Städtebau und Architektur in Berlin zur Zeit des deutschen Kaiserreiches, Berlin, Jovis

Florian, Michael; Harpenau, Johannes (Hrsg.) (1998), Europäische Verkehrsnetze und integrierte Logistiksysteme im 21. Jahrhundert, München, Huss-Verlag

Florida, Richard (2005), Cities and the creative class**,** New York, Routledge

Foucault, Michel (1966), Die Ordnung der Dinge. Frankfurt am Main, Taschenbuchausgabe, (fr. Ausgabe Les mots et les choses – Une archéologie des sciences humaines, Paris 1966)

Friedmann, John (2002), Life Space and Economic Space: Third World Planning in Perspective: Essays in Third World Planning. Transaction Publ.

Giedion, Sigfried (1976), Raum Zeit Architektur, Basel, Boston, Berlin, Birkhäuser Verlag

Gottwaldt, Alfred B.; Handke, Stefan (1998), Berliner Historische Ansichten. Band 3. Berlin Stadtbahn, Berlin, Marion Hildebrand Verlag

Graham, Stephan; Marvin, Steve (2001) Splintering Urbanism. London: Routledge

Habermass, Jürgen (1990), Strukturwandel der Öffentlichkeit, Frankfurt am Main, Suhrkamp Verlag

Halprin, Lawrence (1966), Freeways, New York, Reinhold Publishing Corporation

Harvey, David (1989), The Condition of Postmodernity, Oxford, Blackwell

Harvey, David (2000), Possible Urban World, In: Lotus International 110, Milan

Hegemann, Werner (1988), Das steinernde Berlin - Das steinerne Berlin. 1930, Geschichte der größten Mietkasernenstadt der Welt, Frankfurt a. M, Vieweg- Verlag

Hoffmann-Axthelm (1984), in: Arbeitsgruppe Berliner S-Bahn (Edit.) (1984), Die Berliner S-Bahn, Berlin, Ästhetik und Kommunikation Verlag

Huyssen, Andreas (1994), Monuments and Memory in a postmodern age, in: J.E Young (ed) The Art of Memory: Holocaust Memorials in History, Münich, Prestel Verlag

IBA International Building Exhibition Berlin 1987 (1987), in a+u Magazin Vol. 5

Illustrierten Zeitung (Edit.) (1882), Die Berliner Stadtbahn, Berlin

Jackson, Peter (1998), in: Jayne, Mark (2006), Cities and Consumption, Abingdon UK, Routledge

Jahnke, (Claus) (1998), in: Florian, Michael; Harpenau, Johannes (Edit.) (1998), Europäische Verkehrsnetze und integrierte Logistiksysteme im 21. Jahrhundert, München, Huss-Verlag

Jameson, David (2009), Distillation, Sydney, Images Publishing Group Pty.Ltd

Jayne, Mark (2006), Cities and Consumption, Abingdon UK, Routledge

Kirchhoff, Peter (2004), in Gertz, Carsten; Stein, Axel (2004), Raum und Verkehr gestalten, Berlin, Edition Sigma

Knödler-Bunte, Eberhard (1984), in: Arbeitsgruppe Berliner S-Bahn (Edit.) (1984), Die Berliner S-Bahn, Berlin, Ästhetik und Kommunikation Verlag

Königlich Preußischer Minister der öffentlichen Arbeiten (Edit.) (1982), Berlin und seine Eisenbahnen. 1846-1896, Berlin, Ästhetik und Kommunikation Verlag

Koolhaas, Rem (2000), Mutations, Barcelona, ACTAR

Krier, Rob (1989), Über architektonische Komposition, Stuttgart, Klett-Cotta

Kuhlmann, Bernd (2006), Bahnknoten Berlin: Die Entwicklung des Berliner Eisenbahnnetzes seit 1838, Berlin, Verlag GVE.

Külz, Rolf (1984), in Arbeitsgruppe Berliner S-Bahn(Edit.) (1984), Die Berliner S-Bahn, Berlin, Ästhetik und Kommunikation Verlag

Kutter, Eckhard (2005), Entwicklung innovativer Verkehrsstrategien für die mobile Gesellschaft, Berlin, Erich Schmidt Verlag

Läpple, Dieter (1991), in: Macher, Hans Jürgen (2007), Methodische Perspektiven auf Theorien des Sozialen Raumes, Neu-Ulm, AG SPAK Verlag

Larimer, R. (1999), In: Allen, Stan (1999) Points and Lines: Diagrams and Projects for the City, New York, Princeton Architectural Press

Lash, Scott; Urry, John (1994), Economies of Signs & Space, London, SAGE Publications Ltd.

Lefebvre, Henri (1991), The Production of Space, Malden USA, Blackwell Publishing.

Lefebvre, Henri (2003), The urban revolution, Minneapolis, University of Minnesota Press

Löw, Martina (2002), Differenzierungen des Städtischen. VS Verlag

von Lüpke, Dieter (1983), S-Bahn in Berlin (West) Konzepte zu ihrer Integration und Modernisierung, Berlin, Regional Planning Institute at the Technical University of Berlin

Luzzi, James (2001), The Rational Planning Model in forest Planning, Oregon, Institute for a Sustainable Environment

Lynch, Kevin (1960), The image of the City, Massachusetts USA, MIT Press

Lynch, Kevin; Appleyard, Donald; & Myer, John R. (1964), The View from the Road, Cambridge, Massachusetts, USA, MIT Press.

LSI, Deutsche Bank Alfred Herrhausen Society (Edit.) (2007), The Endless City, London, Phaidon

Macher, Hans-Jürgen (2007), Methodische Perspektiven auf Theorien des sozialen Raumes, Neu-Ulm, Ag Spak Verlag

Marvin, Simon; Graham, Stephen (2001), Splintering Urbanism, New York, Routledge

Miles, Steven (1998), The consuming paradox: a new research agenda for urban consumption in Urban Studies Vol .35, SAGE Online

Mumford, Lewis (1961), The City in History, New York, Harcourt, Brace & World, Inc. Harvest Books

Neumeyer, Fritz (1990), Realität und Disziplin, In: ARCH+99

Orth, August (1871), Berliner Centralbahn. Eisenbahnproject zur Verbindung der Berliner Bahnhöfe nach der innern Stadt, Berlin, Verlag von Ernst & Korn

Oswalt, Philipp (2000), Berlin, Stadt ohne Form: Strategien einer anderen Architektur, München, Prestel Verlag

Peters, Deike (2009), The Renaissance of Inner-City Rail Station Areas: A Key Element in Contemporary Urban Restructuring Dynamics. Critical Planning. 16:1, 162-185

Peters, Deike; Alfaro d´Alençon, Paola (forthcoming) Bahnhöfe als Motoren der Stadt- und Quartiersentwicklung

Peters, Günter (1995), Kleine Berliner Baugeschichte – Von der Stadtgründung bis zur Bundeshauptstadt, Berlin, Stapp Verlag

Porter, Michael (2000), The City Reader, London, Routledge

Reichsbahn (Edit.) (1932), Fünfzig Jahre Berliner Stadtbahn, Berlin

Riege, Schubert (2005), in: : Macher, Hans Jürgen (2007), Methodische Perspektiven auf Theorien des Sozialen Raumes, Neu-Ulm, AG SPAK Verlag

Rossi, Aldo (1984), The Architecture of the city, Cambridge, MIT Press

Sassen, Saskia (2000), Urban Economics and Fading Distance, In: Lotus International 110, Milan

Sassen, Saskia (2001), Reading the city in a global digital age: between topographic representation and spatialized power projects, In: Art Journal, Vol 60, N° 2, New York

Sassen, Saskia (2002), Global Networks, Linked Cities, New York, Routledge Publisher

Sassen, Saskia (2003), Globalization or denationalization, London, Taylor & Francis Ltd

Scharoun, Hans (1964), State Library, Berlin, Stiftung Preussischer Kulturbesitz

Schachinger, Erika (1984), in: Arbeitsgruppe Berliner S-Bahn (Edit.) (1984), Die Berliner S-Bahn, Berlin, Ästhetik und Kommunikation Verlag

Schafer, Andreas; Victor, David (1997), The Past and present (Future) of the Global Mobility, New York, Scientific American Magazine

Schievelbusch, Wolfang (1986), The Railway Journey, Berkeley, Los Angeles, California, The University of California Press. Original: Geschichte der Eisenbahnreise, 1979, München

Schmidt, Hartwig; Eilhardt, Eva (1984), Die Bauwerke der Berliner S-Bahn, Berlin, Senatsverwaltung für Bau- und Wohnungswesen, Movimento Druck

Sennett, Richard (1995), Fleisch und Stein, Berlin, Berlin Verlag

Sennett, Richard (1998), Der flexible Mensch, Berlin, Berlin Verlag

Sennett, Richard (2001), Verfall und Ende des öffentlichen Lebens. Die Tyrannei der Intimität, Frankfurt am Main Fischer, Taschenbuch Verlag

Siewert, Horst H. (1978), Die Bedeutung der Stadtbahn für die Berliner Stadtentwicklung im 19.Jahrhundert, Hannover, Techn. Univ. Diss.

Simmel, Georg (1903), Die Großstädte und das Geistesleben, in: Simmel, Georg (1984), Das Individuum und die Freiheit: Essais, Berlin, Wagenbach Verlag

Smets, Marcel (2000), The Contemporary Landscape of European Infrastructure, in: Lotus 110

Smets, Marcel (2006), Conceiving Infrastructure as a mode of Urbanism, canalizing and colonizing the Campine, Leuven, Research Report Catholic University of Leuven, Research Group Urbanism and Architecture (OSA)

Soja, Edward. **W.** (2000), Postmetropolis- Critical Studies of cities and regions, Oxford, Blackwell

Soja, Edward.W. (2002), Thirdspace, Blackwell Publishers, Cambridge, Mass and Oxford

Sort, Jordi Julià (2006), Redes Metropolitanas – Metropolotan Network, Barcelona**,** Editorial Gustavo Gili

Stratenschulte, Eckart D. (1997), Kleine Geschichte Berlins, München, Deutscher Taschenbuchverlag

Steguweit, Christian (1997), in: BDA, DB AG, DAZ & Meinhard von Gerkan (Edit.) (1997), Renaissance der Bahnhöfe: Die Stadt im 21. Jahrhundert, Braunschweig/ Wiesbaden, Vieweg Verlag

Stein, Axel; Gertz, Carsten (Edit.) (2004), Raum und Verkehr gestalten, Hamburg, Deutsche Nationalbibliografie

Tae-Wook, Cha (1998), Harvard Project in the City, in: Koolhaas, Rem (2000), Mutations, Barcelona, ACTAR

Trancik, **Roger** (1986), Finding lost space: Theories of urban design, New York, Wiley Publisher

Tomazinis, Anthony (1975), Productivity, efficiency and quality in urban transportation systems, Lexington Massachusetts, Lexington Books Publisher

Vesely, Dalibor (2004), The Age of divided Representation, Cambridge, MIT Press

von Gerkan, Meinhard (1997), in: BDA, DB , DAZ, Meinhard von Gerkan (1997), Renaissance der Bahnhöfe, Braunschweig/Wiesbaden, Vieweg Verlag

Wagner, Otto (1911), Die Groszstadt. Eine Studie über diese, Wien, Schroll-Verlag

Weber, Max (1956), Staatssoziologie, Berlin, Duncker&Humblot

Wirth, Louis (1938), Urbanism as a Way of Life, Chicago, Chicago University Press

Wissmann, Matthias (1997), in: BDA, DB AG, DAZ & Meinhard von Gerkan (Edit.) (1997), Renaissance der Bahnhöfe: Die Stadt im 21. Jahrhundert, Braunschweig/ Wiesbaden, Vieweg Verlag

Wucherpfennig, Claudia (2006) Bahnhof: (stadt)gesell- schaftlicher Mikrokosmos im Wandel. Eine "neue kulturgeographische" Analyse. Oldenburg, BIS-Verlag

Yin, Robert (2004), Case study methods, in: American Educational Research Association (2004), Complementary Methods for Research in Education, Washington DC, American Educational Research Association

Internet

Alfaro d´Alencon (2005) in Sedus investigation on changing conditions for workspace in the urban areas, http://www.sedus.de/berlage/de/pgeNyk/4.html (30. June 2009).

Castells, Manuel (2001), La ciudad de la nueva economia, In: Papeles de Población, Universidad Autónoma de México.http://redalyc.uaemex.mx/redalyc/src/inicio/ArtPdfRed.jsp?¡Cve=11202708)

Doevendans, Kees (2004), Postmodern Urbanism, Eindhoven.

http://eindhovenseschool.net/plug/content/content.php?content.68

Massey, Doreen (1994) A Global Sense of Place – From Space, Place and Gender. Minneapolis : University of Minnesota Press,
http://www.unc.edu/courses/2006spring/geog/021/001/massey.pdf (14th June 2009)

Slootweg, H; Verhoef, K. (1999), A short literature survey about infrastructure definitions, http://www.infrastructures.tudelft.nl/infradef.html.

Treichel, Thorkit (2005), Einmal Slum und zurück, Berliner Zeitung, Internetarchiv Berliner Zeitung.http://www.berlinonline.de/berliner zeitung/archiv/.bin/dump.fcgi/2005/0117/berlin/0074/index.html

Veibelmann, Tina (2006), Alles nur eine Sehnsucht. Über Bahnhöfe und ihre Verheißungen.http://www.freitag.de/2006/24/06241901.php

http://daten.clearingstelle-verkehr.de/196/10/mid2002_ergebnisbericht.pdf ,p. 6 (19th June, 2009)

www.shared-space.nl ,(15th July 2009)

Foucault (1967) Of other spaces. Heterotopias in http://foucault.info/documents/heteroTopia/foucault.heteroTopia.en.html (2nd July 2009)

http://www.bmfsfj.de/Publikationen.html , 21.June, 2009. In 2008, the highest increase of employes was done in the service sector with 1, 1 Million more employees than 2007. (Zeit Online, 2008)

http://www.futuremanagementgroup.com/Zukuenfte/ZFIF-Tertiarisierung-und-Quartarisierung, (20. July 2009)

http://www.stadtentwicklung.berlin.de/verkehr/verkehr_in_zahlen/en/wichtige_entwicklungen/index.shtml (15th July 2009)

http://www.stadtentwicklung.berlin.de/verkehr/verkehr_in_zahlen/en/wichtige_entwicklungen/index.shtml (15th July 2009)

http://www.stadtentwicklung.berlin.de/verkehr/verkehr_in_zahlen/download/en_s_016.pdf (10th of June 2009) Der www.stadtbahnumbau-berlin.de/Suedkreuz.1528.0.html (March 5th 2009)

Leipziger Charta (2008), http://www.eu2007.de/de/News/download_docs/Mai/0524-AN/075DokumentLeipzigCharta.pdf

http://www.stadtplanungsforum.de/mat/SPF-STEK-ak-oeffentlicherraum-05-05-03.pdf

http://www.dau.uniroma1.it/eventiDAU/intervento_di_jean_remy.htm,

Newspaper articles

Beul, Miriam M. (1999), Lehrter Bahnhof wird zum Kaufhaus umgebaut. Ein großer Teil der Flächen im neuen Bahnhof ist für Büros und Einzelhandel vorgesehen, Beriner Zeitung

Doll, Nikolaus (2006), Am neuen Hauptbahnhof ensteht der ideale Stadtteil. Visionen für Berlin, Berliner Morgenpost, Internetarchiv Berliner Morgenpost

Gandzior, Andreas (2004), Savignyplatz. Umsätze im Keller. Bauarbeiten der Bahn rund um den S-Bahnhof dauern 14 Monate – Händler bangen um ihre Existenz, Berliner Morgenpost, Internetarchiv Berliner Morgenpost

Hoffmann, Hans Wolfgang (1998), Sprung auf den abgefahrenen Zug: Ostkreuz: Der Versuch, das Kreuz auf dem Buckel des Ostens städtebaulich zu bearbeiten, Berliner Zeitung, Internetarchiv Berliner Zeitung

Laninger, Tanja (2002), S-Bahn-Bögen stehen leer, Berliner Morgenpost

Matthes, Günther (1984), Die S-Bahn. Alle, alle sind dafür. Tagesspiegel

Molin, Tina (2007), Tanzen im Rhythmus der S-Bahn, Berliner Morgenpost

Neumann, Peter (2006), Berlin macht mobil. Zentralstation und Nord-süd-Trasse verändern die Verkehrsströme der Stadt. Die Wirtschaft träumt vom Boom. Doch Forscher warnen vor zu viel Hoffnung, Berliner Zeitung, Internetarchiv Berliner Zeitung

Prellberg, Michael (1999), Charlottenburg. Zum Flanieren kommt keener in die Savigny-Passage. Leerstand wird zu Dauerproblem: Fünf von zehn Läden in den S-Bahn-Bögen finden keine Mieter, Berliner Zeitung, Internetarchiv Berliner Zeitung

Pletl, Steffen (2006), Mitte – Der Alexanderplatz – für Fußgänger gleicht er wegen der zahlreichen Baustellen in diesem Tagen einem Labyrinth

Schröder, Till (1999), Berliner S-Bahn-Bögen lassen sich häufig nur schwer vermieten. Standort ist entscheidend / Sanierungen am Moabiter Werder geplant, Berliner Zeitung, Internetarchiv Berliner Zeitung

Seewald, Stefan (2002), Eine lange Geschichte: Die Ringbahn feiert 125. Geburtstag, Berliner Morgenpost Internetarchiv Berliner Morgenpost

von Gerkan, Meinhard (2006), Der Hauptbahnhof, Süddeutsche Zeitung

Interview partners

Amsterdam Zuid, Projekt Management, Architect, Amsterdam, 2006

Arches shopkeepers at Savignyplatz and Jannowitzbrücke, 2006 - 2010

DB Station&Sevice, employee in Berlin, 2009-2010

DB Service Immobilien GmbH, employee in Berlin, 2006

Friends of the Highline, office manager, NYC, 2005

Gerkan, Marg und Partner, Architect, Hamburg, 2010

Members of Community groups in Moabit, Lehrter Strasse in Berlin, 2010

Quartiermanagements Moabit, Lehrter Strasse in Berlin, 2010

Quartiermanagements Kreuzberg, Obere Stadtspree in Berlin, 2009

Senatsverwaltung für Stadtentwicklung und Umweltschutz, Spree Management, 2008 - 2010

Urban activists in River Spree Areas, Friedrichshain-Kreuzberg in Berlin, 2008-2010

Urban dwellers in the Savingyplatz area, Hauptbahnhof area, Jannowitzbrücke and Area of Obere Stadtspree, 2006 - 2010

VIVICO, employes in Berlin, 2010

General Bibliography

Allard, Pablo (2000), Costanera Norte: Mitos, verdades y lecciones de uan autopista urbana, Chile, ARQ 44

Altshuler, Alan (1980), The Urban Transportation System: politics and policy innovation **/**Alan Altshuler. With James P. Womack ; John R. Pucher**;** The MIT Press series in transportation studies **;** Cambridge, Mass. : MIT Press

Beck, Ulrich (2001), Individualisierung, Globalisierung und Politik, In: Arch+ 158

Becker, Stephan (2001), Presto Lounge - Der „schnelle" Aufenthaltsraum, In: Scheinschlag 8/2001, Berlin

Bellmann, Günther (2001), Durch Berlin mit der S-Bahn. Savignyplatz bis Alexander Platz, Graulitz, Be Bra Verlag

Blennemann, Friedhelm (1976), U-Bahnen und Stadtbahnen in Deutschland, Frankfurt, ALBA

Bolz, Norbert (2000), Kultmarketing, In: Isenberg, Wolfgang und Sellmann, Matthias (Ed.), Konsum als Religion, Mönchengladbach, B.Kühlen Verlag

Buchanan, Ian (1992), Writing the wrongs of history: de Certeau and post-colonialism, Journal of the South Pacific Association for Commonwealth Literature and Language Studies

Chtcheglov, Ivan (1953), Formulary for a new Urbanism, Kapitel: The Situationist City

Cloke, Paul; Johnston, Ron (Ed.) (2005), Spaces of Geographical Thought, London, Sage Publications

Corner, James (1991), Discourse on Theory II: Three Tyrannies of Contemporary Theory and the Alternative of Hermeneutics, In: Landscape Journal 10

De Matteis, Giuseppe (1998), Suburbanización y periurbanización. Ciudades anglosajonas y ciudades latinas, In Francisco Javier Monclus (Ed.), La ciudad dispersa, Centre de Cultura Contemporania de Barcelona, Barcelona

Easterling, Keller (2000), Interchange and container - the new Orgman, In: Perspecta 30

Engel, Helmut (1985) Vorortverkehers in Berlin, Berlin

European centre for mobility Documentation (2006), Fourth International Conference on the History of Transport, Traffic and Mobility, Paris, T2M

Figueroa, Oscar (2004), Infraestructura, servicios públicos y expansion urbana en Santiago Chile, Santiago Instituto de Estudios Urbanos y Territoriales, Pontificia Universidad de Católica de Chile

Fernandez Galiano, Luis (2003), Urban Landscapes: Geometries of Movement, Organics Agitations Modern Times, Landscape on Wheels, Paradoxes of Density, in: AV Monographs 104

Häßler, Michael (2005), Bahnhof und Stadt*,* Berlin

Howard, Adams; Wrede Stuart (1991), Landscape and Culture in the Twentieth Century, The Museum of Modern Art, New York

Ibelings, Hans (2000), 20th Century Urban Design in the Netherlands, Rotterdam, NAI Publishers

Kleihues, Josef Paul (Herausgeber) (1987), 750 Jahre Architektur und Städtebau in Berlin. Die Internationale Bauaustellung im Kontext der Baugeschichte Berlins, Stuttgart, Verlag Gerd Hatje

Klünner, Hans-Werner (1985), S- und U-Bahnarchitektur in Berlin, Der Senator für Bau- und Wohnungswessen, Katalog zur Austellung

Korff, Gottfried; Rürup, Reinhard (Hrsg) (1987), Berlin, Berlin, Katalog, Berlin

Mangabeira Unger, Roberto (1991), The better Futures of Architcture, New York, Rizzoli

Masur, Gerhard (1971), Imperial Berlin, London, Routledge

Mom, Gijs (2004), Motion European Mobility History, Budapest, Mobility History Group within the Tensions of Europe Programme

Nova, G. (Edit.) (1998), S-Bahn Berlin: Wartenberg- Berlin Spandau Museum, München, Signal Sonderausgabe

Ortúzar Salas, Juan de Dios (2002), Autos versus Transporte publico. El garrote y la zanahoria, In: Revista Universitaria N° 78, Santiago, Chile

Perez, Fernando (2006), Las pasarelas de la Norte-Sur: calces y roces entre peatones y vehículos

Smerk, George M. (1974), Urban Mass Transportation, Bloomington, Indiana University Press

Thierstein, Alain; Schamp, Eike W. (2003), Innovation, Finance and Space, Frankfurt/Main, Institut für Wirtschafts- und Socialgeographie