

# Building the urban physiognomy of Berlin through the “well-ordered facade” of the *Stadtbahn*

FILIPE TEMTEM

## Abstract

This article unfolds the analysis of the railway viaduct that crosses the German capital in an eastern-western direction. The aim is to decipher the urban design strategies used in the highly planned *Stadtbahn*, focusing on the configuration of Berlin's urban physiognomy through a “well-ordered facade.” Thus exposing the morphologically linear construction associated with transport infrastructure, making clear the railway project design as a building-viaduct, imposing its architectural façade's scenic effects on the surrounding public space. Through an in situ survey it is left clear that this building-viaduct, has the ability to break the “curse of border vacuums”, counteracting the destruction of neighboring areas that typically converts the segregated path into a physical and social border route. The intention is to clarify the value that architecture adds to these infrastructures originated as an accurate response to specific problems of time and distance, enlightening a multidisciplinary field, which becomes increasingly unavoidable, where the contribution of architects is still very much diffused.

## Keywords

Transport infrastructure, Railway, Well-ordered facade, Building-viaduct, Urban physiognomy, Berlin.

\*This article is part of Filipe Temtem PHD research, awarded with a financial support by CONICYT, VRI and FADEU of the Pontificia Universidad Católica de Chile, and was published in Spanish in the number 06 of RITA.

**Filipe Temtem.**FADEU, Pontificia Universidad Católica de Chile, Architect, FA Universidade Técnica de Lisboa; Master in Theory and Practice of Architectural Project, ESTSAB Universidad Politécnica de Catalunya; and PhD(c) in Architecture and Urban Studies, FADEU Pontificia Universidad Católica de Chile. Currently, is an effective member of the OASRS and co-founder of the “FTTA: Architecture &Design” studio. Served as director of the Design Department and Representation of Architecture Projects (DDRAP) in the housing cooperative “A Nossa Casa”. His work at “PR Arquitectura Global” is highlighted by the first prize on the National Contest of Architecture and Public Space “Fundação António Manuel Sardinha”, won by the studio. Parallely, Temtem works as teacher and researcher. In this context, his collaboration with “ International Research Group of Architecture & Society” (GIRAS) of the ETSAB is underlined as well as his most recent experience at the Technische Universität Berlin, where was invited to integrate the “Urban Research and Design Laboratory” as international partner. Presently he works at FADEU of Pontificia Universidad Católica de Chile, integrating the “City & Mobility Laboratory” as well as the “Elemental Chair” co-directed by Fernando Pérez Oyarzún and Alejandro Aravena. fatemtemtemdasilva@uc.cl



[Fig. 1] Photograph of the brick viaduct at the time of the inaugurations (1982) + Projections/illustrations of the “inhabited rooms” installed in the arches of the Berlin railway viaduct.

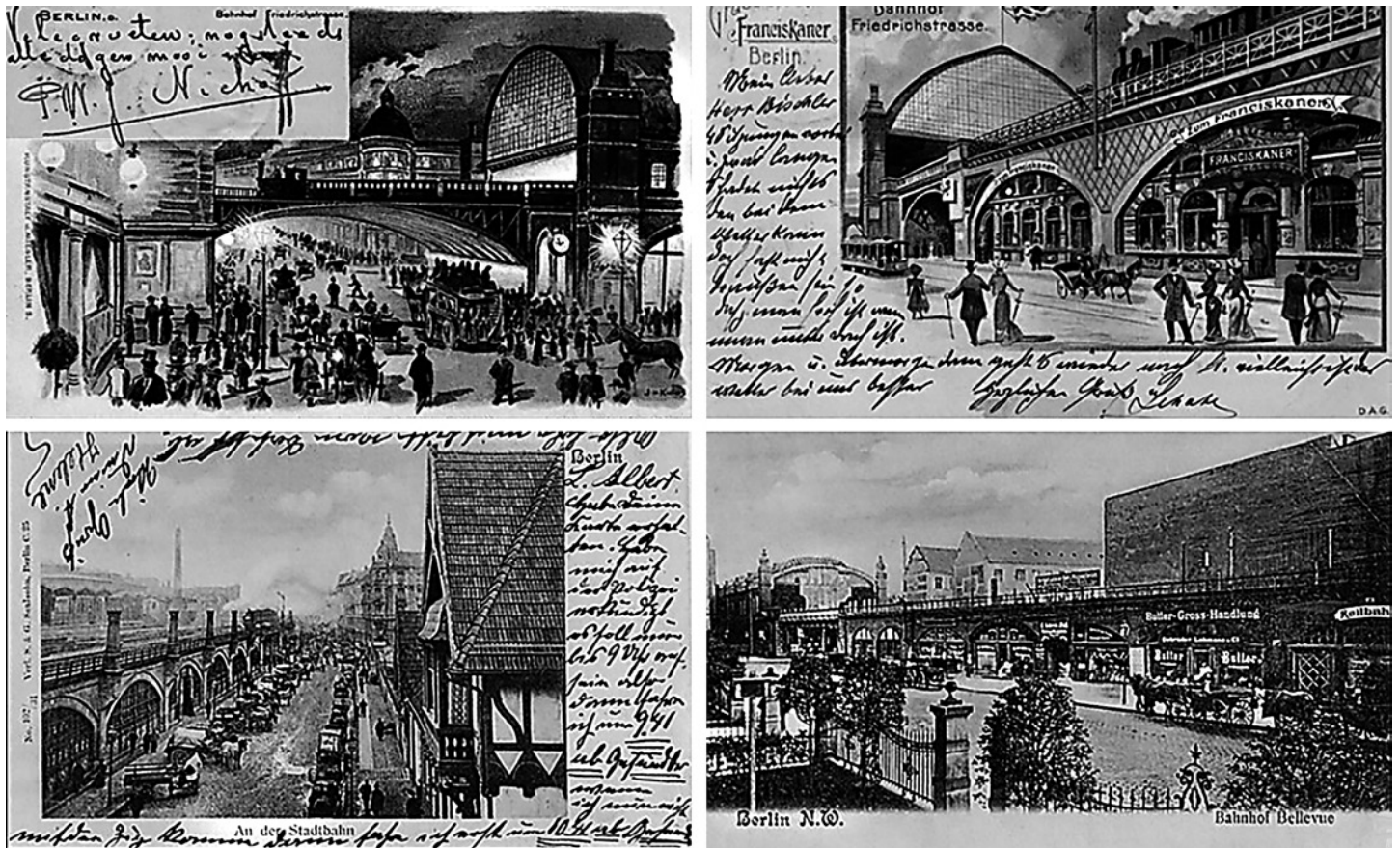
Source: Alfaro (2013).

The Berlin Stadtbahn is a railway line that passes through the center of the German capital from East to West, connecting with the Ringbahn<sup>1</sup> at the intersecting stations of Ostkreuz and Westkreuz. Also designated as “Ost-Westbahn” (East-West Railway), its design was influenced by various authors, such as Otto Busse and Emil Hartwich, even though the implementation of the final project was completed under the ideology of the architect August Orth and the direction of the civil engineer Ernst Dirksen, oberbaurat<sup>2</sup> of the “Metropolitan Railway Company of Berlin”. The construction began in 1875 and was inaugurated for the local trains on the 7<sup>th</sup> of February 1882 and for long distance trains on the 15<sup>th</sup> of May of the same year. The purpose of the work was to interconnect the western and eastern parts of the city through a system of transportation that would allow transit through the center and not only along the perimeter (guaranteed by the Ringbahn). This way, the peripheral areas of Berlin would be linked with the most significant centralities of the capital, strengthening the connectivity of the surrounding areas with the financial district which was understood as the nucleus of the mono-centric economy of Berlin, where all of the economic activity was concentrated (Hegemann:1988).

Even though a subterranean solution - whether tunnel or trench - would have facilitated the implementation of the railway in the city, this was automatically rejected to avoid conflicts with the preexisting buildings as well as technical problems that would have resulted from building iron framework constructions on Berlin’s sandy underground and high ground water table (Boberg et al., 1984:107). To cross the already densified areas of the capital, a brick viaduct was chosen (fig. 1) offering the possibility of uninterrupted traffic, the center-periphery communication and the creation of “inhabited rooms” in the arches of the transportation infrastructure (Knödler-Bunte, 1984:56) (fig. 1). Even though the available sources do not explicitly indicate the motive for rejecting the constructive solution of a miner tunnel or trench, Paola Alfaro (2013) affirms that choosing a viaduct construction was, more than anything, fruit of an economic strategy, given that the development of an elevated

1 The Ringbahn (circular railway) is a 37, 5 km long railway running in a large loop around Berlin’s center. This railway line is formed by a S-Bahn ring and a parallel freight line. Along with the Stadtbahn and Nord-Süd Bahn, it constitutes the three main lines of the S-Bahn. The S-Bahn is an urban transport system operated by S-Bahn Berlin GmbH, a subsidiary of Deutsche Bahn. The S-Bahn (urban train) of Berlin consists of 15 lines integrated with the U-Bahn (underground train) forming the backbone of Berlin’s rapid transport system.

2 In all of the German states, the term Baurat specified a structural expert that worked for the government or state authority, whether railway, municipal or ecclesiastical. Other labels derived from this are Regierungsbaurat or Generaldirektionsrat (construction official of the district); Oberbaurat (construction official of a building or public work), Kirchenbaurat (construction official of the church).



[Fig. 2] Collection of postcards at the end of the XIX Century where the “well-ordered façade” of the railway viaduct is presented as a branding image of the German capital.

Source: Gottwaldt (1998).

solution would play an economic-reconciler function, between the different interest groups involved in the process of the urban implementation.

However, this maneuver, in addition to being constituted as a strategic instrument for the economy of Berlin, entailed a purpose of reconfiguring the center of the city. Let us say that the projection of an “inhabited arcade” beneath that Berlin railway is evidence of an urban design strategy linked to the elevation of the Stadtbahn. According to the influential manuscript of August Orth (1871), the idea of constructing a railway viaduct was intended to suppress the physical presence of the express line at the ground level, replacing it with a “well-ordered façade” (Fassade wohlgeordnete)<sup>3</sup>. Just as described in the “Chronical of Berlin and its Railways”<sup>4</sup>, one of the purposes of the elevated planning of the Stadtbahn was to improve the physical appearance of the urban system, through an attractive and well organized façade, that would give a new face to Berlin's public space. The intention, then, was to subject the urban composition of the center of Berlin to the scenic effects of a linear façade, using the sinuous perspective of that architectonic front to compose the adjacent public space along the train line.

With this perspective, the city is pictorially conceived, subjecting the railway design to the physical appearance of an architectonic façade, that would be converted in the branding image of the capital in the most varied advertising spots [fig. 2]. This because per the urban theories of that period, “what influences more in a city image is its ‘physiognomy’. It has the difficult task of causing the first impression that has to be as favorable as possible.”<sup>5</sup> As Otto Wagner (Mallgrave, 1993: 68) explains, this urban physiognomy<sup>6</sup> is the perfect synthesis between technology and architecture, thus referring to the introduction of technological progress in the city, through public works such as bridges, viaducts, dams and high transport lines at various levels. Just as Fritz Neumeyer mentions, (Mallgrave, 1993: 119) in a period where an array of urban theories - related to the construction of the image of the city - emerged, the projection of an urban facade, associated with the metropolitan railway, synthesizes the mission of reconciling the utilitarian and realistic orientation of transport and

3 ORTH, August. *Berliner Centralbahn. Eisenbahnproject zur Verbindung der Berliner Bahnhöfe nach der innern Stadt*. Berlin, Verlag von Ernst & Korn, 1871.

4 VON DER LEYEN, Alfred (1982). *Berlin und seine Eisenbahnen 1846-1896*. Berlin: Ästhetik und Kommunikation Verlag.

5 PIZZA, Antonio; PLA, Maurici. *Viena\_Berlin. Teoría, arte y arquitectura entre los siglos XIX y XX*. Barcelona: ETSAB, Edicions de la UPC, 2002, pp.80.

6 The idea of urban physiognomy matches the city concept proposed by Otto Wagner in Vienna's urban planning, where his urban rail network was built. It is a concept perfectly described in both his books, *Moderne Architektur* and *Die Großstadt*.



[Fig. 3] Photo of the linear urban morphology of the Crescents of Bath. Source: Curl (2002) + Photo of the linear urban morphology of "building-viaduct" next to the Dircksenstrasse. Source: google earth.

the new constructive technologies with the idealistic forms of pediment and artistic expression, derived from the architecture. Beside an interesting architectonic façade, *"the elevated railway deforms, (...) in a very perceptible manner, the image of the city, (...) is somewhat less expensive than the subterranean railway, and the variety of views towards the exterior offers the passenger some entertainment. For this reason (...) much congeniality between citizens is found, whom will be firstly concerned with conserving an urban image that is as beautiful as possible, and, this is of course, always the point of view of the architect."*<sup>7</sup>

It is from this point of view that the architect August Orth takes the synchronic reference of the Crescents of Bath<sup>8</sup>, which proposed the construction of the public space through architecture with a Neo-Classical façade, longitudinally distended along the city of Bath. The organic line of the Crescents of Bath (fig. 3) – just as the infrastructural body of the Berlin railway viaduct (fig.3) – constructs a built chain that breaks with the closed geometric form of the Baroque enclosures, emphasizing the urban space in the perspective and the undulation of the Palladian façade. It is a scenic proposal of the architects John Palmer and John Wood that circumscribes the curvilinear and rectilinear paths of the streets of Bath through the long built rows, laying a backdrop for the English public space. We can speak of a linear urban morphology that interprets the city as an architectural fact, considering that the construction of the public space is inherently subordinated to the architecture (Lamas, 1992: 168). In other words, an urban form that is determined according to an interlinked system of architectonic objects, consequently understanding that architecture as the correct and overall key to interpreting the city as spatial structure.

From this perspective, we try to explain how the Crescents of Bath constituted a great reference for the project of the Stadtbahn of Berlin. We can assume that August Orth translated the architectonic vision of the British architects Palmer and Wood to the engineering perspective of the "Metropolitan Railway Company of Berlin", transforming the typical railway project into a real exercise of architecture and urbanism. Adopting this approach, it is formulated that the design of the railway viaduct passes as the construction of an architectonic chain crowned by rails, whose "well-ordered façade" (Fassade wohlgeordnete) is installed as a key element for the urban design and respective public space. That is to say, that the Neo-Classical facade of the Crescents of Bath [fig.4], like the Neo-Romanesque<sup>9</sup> arcade of the Stadtbahn [fig.4] structures the urban composition of the center of Berlin, acting as a vertebral axis that joins transportation infrastructure and architecture in a single constructive element.

7 WAGNER, Otto(1993). *La arquitectura de nuestro tiempo. Una guía para los jóvenes arquitectos*. Madrid: El Croquis Editorial, p. 109.

8 The Crescents of Bath planning occurred in the XVIII century in England, in the beginning of the Industrial Revolution. The Crescent Royal was designed by John Wood in 1769 and the Lansdowne Crescent by John Palmer in 1794.

9 The Neo-Romanesque, also known as "Normandy style" or "Lombard style", is an architectural style set in the historicism of the XIX Century and lasted until the first decades of the XX Century. Based on the reinterpretation of the Romanesque style of the XI to XIII Centuries, it was mainly used in the construction of religious and civil buildings, also being used in the restoration of medieval buildings (such as the façade of the Speyer Cathedral in Germany, constructed in the middle of the XIX Century). In the United States, it was one of the most used styles in the construction of public buildings, such as town halls and university campuses. In Portugal, many castles and churches were "re-romanesqued" during the first half of the XX Century.



[Fig. 4] Photographic register of the south façade of the Friedrichstraße station. Source: Archive of the Prussian Heritage Foundation: Berlin in frühen Photographien 1857–1913. Schirmer/Mosel, Munich 1984 + Photographic register of the neoclassic facade of the Crescents of Bath. Source: Petti (2008).

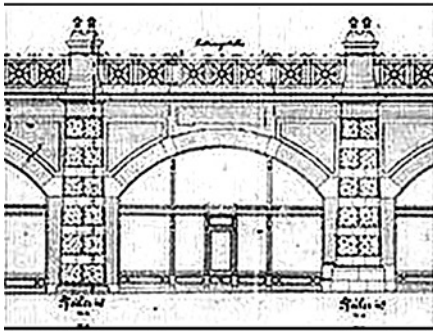
According to the British reference, we can affirm that the urban morphology orchestrated by August Orth combines the engineering of the railway path with the architecture of the viaduct that supports it, composing a *mega-structure* that crosses the center of the city of Berlin in the East-West direction. From this point of view, it is an example that anticipates the utopist designs of “traffic architecture” - enunciated by Colin Buchanan in his report “Traffic in Towns” in 1963, which precisely attempted to explore the synergy between mobility and urban form. We look to examples such as Roadtown by Edgar Chambless [fig. 5] or the Obus Plan by Le Corbusier [fig. 5], for whom the best way of managing the implementation of a segregated mobility system – in the metropolises with monumental traffic congestion and an unbearable way of life – would be to design it as part of a linear *mega-block* capable of extending itself over several kilometers of the city, offering a variety of uses and programs for the inhabitants.



[Fig. 5] Perspectives of the project Road Town de Edgar Chambless. Source: Sky & Stone (1976) + Croquis of the Obus Plan by Le Corbusier, 1932. Source: Comas (2015).

Let us say that the planners of the Stadtbahn solidify the apparently illusory proposals of the modern avant-garde, announcing its urban design principles in the center of Berlin. With this, a paradigm shift occurs in the railway design of that period, facing the train line not as a simple track, but as a mega-covering of a longitudinal building under which a multiplicity of facilities is installed. These “hybrid” solutions are tested in synchronic examples, such as the Stadtbahn of Vienna, designed by Otto Wagner, who also adopted a system of integrated planning capable of combining both road and architectonic design, in a single work. Like Orth, Wagner idealizes, a profitable and habitable structure, projecting the arched openings of the Viennese railway viaduct through an architectural frontispiece of historicist style [fig.6], where facilities of all kinds could be installed [fig.6], This is opposite to other simultaneous prototypes, such as the Chicago subway, which despite its German roots, ended with a railway planning limited by an engineering vision , conceiving it as a structural bridge with nothing below, leaving an undetermined space that became residual and useless [fig.6],





[Fig. 6] Photograph + Historical style elevation of the project by Otto Wagner for one of the stretches of the Stadtbahn of Vienna, 1890. Source: <https://web.archive.org/web/20060501055927/http://progs.wiennet.at/ottowagner/linien/guert/gue1-2.htm>. + Photograph of a segment of the Chicago subway "Chicago L" at the time of its inauguration.

Source: The Electrical Review, Vol 37, 1885.

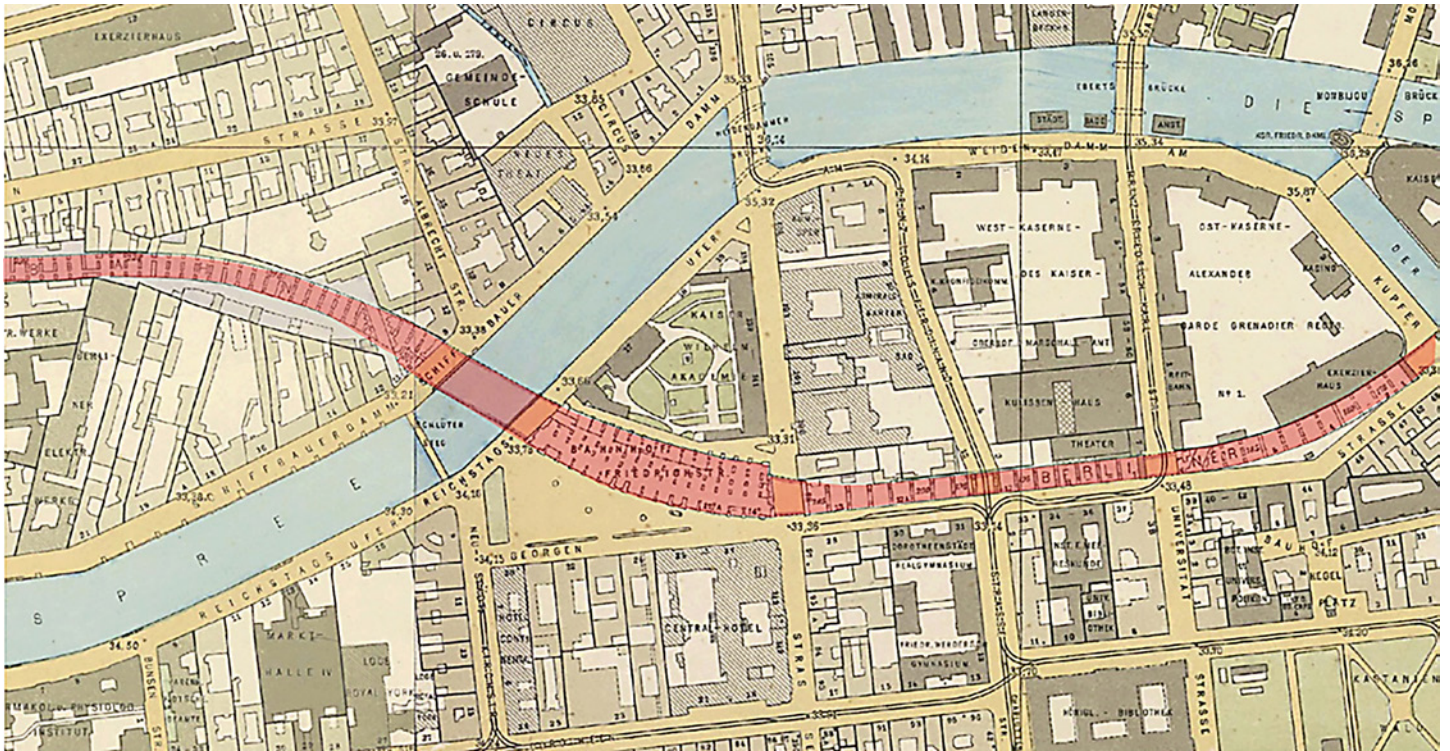
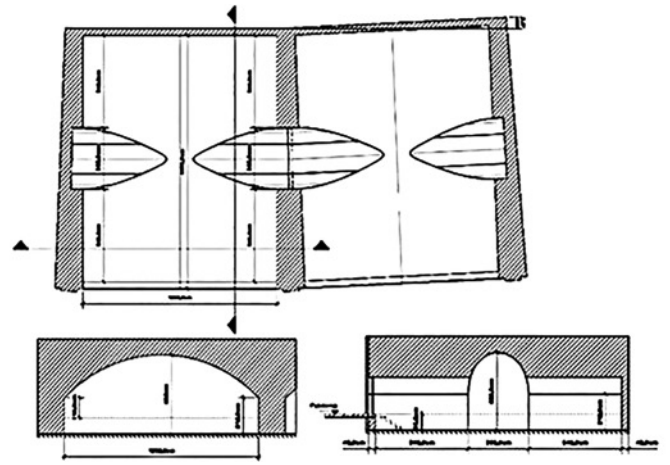
From the background described above, we can confirm that the Berlin railway is designed as a long and sinuous *building-viaduct* with 757 arches and about 25 km in length. A linear construction crowned with 12,145 km of rails, built with 1,823 km of iron bridges, 1,683 km of sand embankments and 7,964 km of walled viaducts between the 9 stations (Hoffmann-Axthelm, 1984: 116). Some sections of this construction are erected on sand embankments and iron bridges, while most of its support structure is configured as an "arch bridge"<sup>10</sup> [fig.7]. It is a system similar to the Romanesque half-barrel vault that uses cylindrical vaults as a resistant structure, resorting to masonry of solid brick that works with compression. The material configuration of the *building-viaduct* is thus established by a constructive option that stylistically fits into the Rundbogenstil<sup>11</sup> or "rounded arch style", whose urban physiognomy is conditioned by the recovery of the structural barrel-vaults and the materials of Romanesque architecture, and whose physical appearance is determined by a portico system of bricks that are laid in horizontal rows in the tympanums and transversely as voussoirs. Therefore, the "well-ordered facade" of the Berlin railway is stylistically defined by the Neo-Romanesque character of its support structure, whose ornamentation is mainly manifested in the cornices and archivolts, standing out in the different forms of enclosure of the arches — oscillating between the transparency of the glazed panels with semicircular metal rings and the opacity of brick partitions filling the arched openings of the viaduct with solid drapes, where only small fenestrations are opened towards the outside.

10 The mentioned structure uses a series of arches arranged in the same direction, above which a concrete floor-plate is hung for the tracks to sit rest on. It is a portico system formed by cylindrical vaults, analogous to the Romanesque half-barrel vault, even though the longitudinal dimension predominates over the transversal in these, and therefore the vault effect is minimal. Thus, the arches of the railway viaduct transfer the dead load weight of the tracks (and the respective live loads) towards the supports for half of the compression, transforming them into a horizontal thrust and a vertical load.

11 In Germany, the Neo-Romanesque style achieved the status of being a nationalist style of excellence, being heavily used during the second half of the XIX Century. This way, the German variation of the Neo-Romanesque style is known as Rundbogenstil (rounded arch style), which was quite popular among the German diasporas which began in the 1830s. This style was a deliberate creation by German architects in search of a national architectonic style, arising as a reaction against the Neo-Gothic style, flourished at the end of the XVIII and beginning of the XIX. The brick or monochromatic stone buildings with abundant rounded arches, polygonal towers and barrel vaults are characteristic of this style.

This support structure, besides being a determining factor in the "style" and material configuration of the Stadtbahn, conditions the distribution of its interior space. This is because the load walls and respective foundations are transversely positioned on the longitudinal path of the train, dividing the ground floor of the *building-viaduct* into modules that can reach 10 meters wide [fig.7]. At the same time, the depth of the railway is defined by the four rails (2 for local traffic and 2 for long distances) that compose the railway platform, which is approximately equivalent to 15 meters deep on the arcade ground floor [fig.7]. The height of elevation of the train line is determined by the Prussian guidelines, which required a free space of 14 feet, yielding a height of 5 to 6 meters in the arched enclosures below the railway decking [fig.7]. Thus, the "arch bridge" structure transforms the railway arcade into a modular chain that extends rhythmically throughout the capital [fig.8], providing a linear succession of "habitable spaces" for local commerce.

However, it should be noted that this modular distribution is altered at the crossing points. There, the available area is considerably expanded in order to locate the interconnection and short-distance stations. See how the Friedrichstraße station, built in 1878 under the design of Johannes Vollmer, alters the depth of the railway arcade, which expands with the purpose of creating the boarding platforms of passengers on the first floor, allowing a more complex distribution of the reception



[Fig. 7] Photograph of the structural construction process in “bridge-arch” of the railway viaduct throughout the district of Mitte. Source: Schachinger (1984) + Ground floor plan & explanatory sections of the grouping between the modules of the railway arcade.

Source: Author’s fieldwork realized in situ with collaboration of Ignacia Larrain.

[Fig. 8] Urban plan of the area between the Friedrichstraße station and the so-called Island of Museums, 1910.

Source: Landesarchiv Berlin (adapted by author).

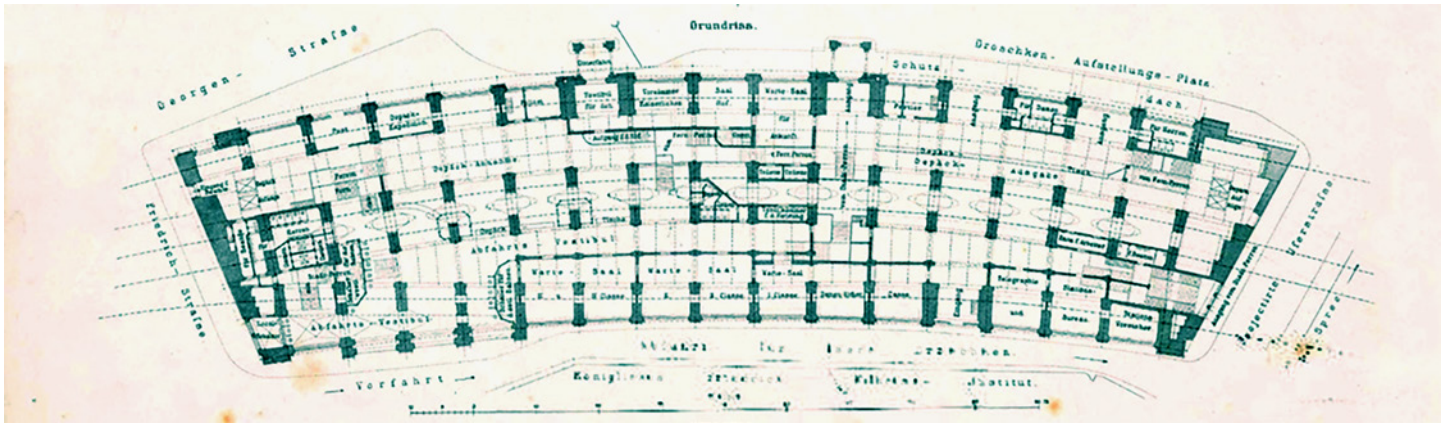
space, located on the ground floor [fig.9]. As can be seen on the ground floor of the station [fig. 9], it follows the rhythmic pattern determined by the railway support structure, splitting the linear distribution into three longitudinal batteries separated by two large interior corridors.

These batteries contain commercial spaces, ticket offices, waiting rooms, rooms for passengers, offices, police stations, mail services, laundries, sanitary facilities, storage rooms, warehouses for storing equipment, etc., while the corridors function as distributing spaces capable of articulating all of these program elements and feeding into a reception hall where all access points converge. From there, the upper floor can be accessed, where the passenger boarding platforms are installed, no longer open-air but rather covered as a kind of industrial hangar. Through the cross-section [fig.10] and respective interior perspective [fig. 10] we can verify how the stations introduce a structural and material contrast in the *building-viaduct*.

*“With the introduction of the station a new building typology emerged (...): 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)”*<sup>12</sup> It is an antithesis between two constructive systems. Thus, the lightweight structure, that covers the interconnection and short-distance space of the first floor, rests on the solid

12 Alfaro d’Alençon, Paola (2013). *The production of urban space through mobility: The Case of the Stadtbahn in Berlin*. Santiago: Pontifical Catholic University of Chile, pg. 48.



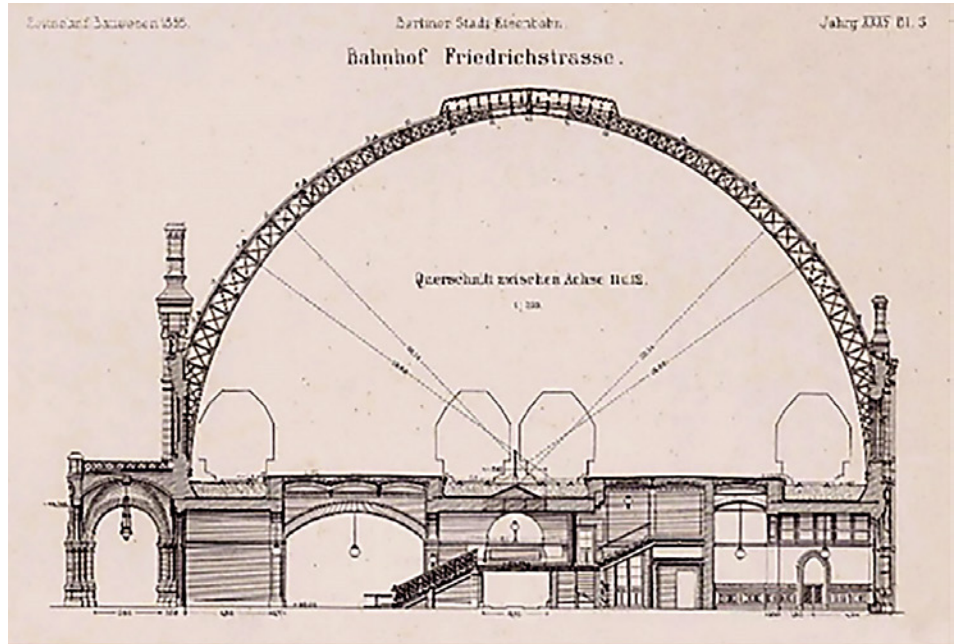


[Fig. 9] Plan of the project by Johannes Vollmer for the Friedrichstraße station, 1878.

Source: Meyers Großes Konversations Lexikon / 6. Auflage (1905–1909).

[Fig. 10] Cross-section of the project by Johannes Vollmer for the Friedrichstraße station, 1878.

Source: Meyers Großes Konversations Lexikon / 6. Auflage (1905–1909) + Interior perspective of the railway hangar of the Friedrichstraße station as designed by Johannes Vollmer, 1878. Source: Brockhaus Konversations-Lexikon, 14. Auflage (Erstausgabe 1891–1895).



13 This cross-frame structure is composed of columns or frames (rigid, semi-rigid or freestanding) made of structural steel. These elements are distributed according to the scale and requirements of each station, taking into consideration that the function is to transport the gravitational and lateral loads transmitted by the supports and crossbars that support the metallic surfaces used in the ceiling. As for the cross framing, these are lightweight structural steel pieces with a small section, similar to a beam whose center is not solid, but rather composed of pieces arranged into a system of triangles. These simply rest or are semi-embedded in the columns, and work as an assembly of bars with the capacity to absorb the compression and tension forces and, at the same time, covering the large spans required each station. To support the weight (dead and live load) of the lightweight roofing, metallic crossbars are used perpendicularly to the cross framing. Other elements that are also used in this type of structure are the diagonal bracing, which serve a double purpose of aligning the structural steel sections and transmitting the horizontal loads of the roof. The wind-bracing pieces, diagonally located between the columns or the diagonal bracing of the roof, create trussed surfaces that distribute the loads produced by the seismic or wind forces on the “bridge-arch” foundation system.



14 According to Frampton (1995) the stereotomic “is where mass and volume are formed together through the repeated stacking of the heaviest elements”, while the tectonic is “where the lightest lineal components are assembled as if taking on a spatial matrix.”

foundation, which configures the passenger reception space in the ground floor, using it as a structural plinth (Schievelbusch, 1986: 155). That is, the “arch-bridge” structure made of brick functions as the foundation of the “industrial nave”<sup>13</sup> on the first floor, supporting the metal hangar for the train. We can consider this a symbiosis between the tectonic and stereotomic<sup>14</sup> character of the *building-viaduct*



## FILIPE TEMTEM

Building the urban physiognomy  
of Berlin through  
the “well-ordered facade”  
of the Stadtbahn

[Fig. 11] South elevation of the Friedrichstraße station as designed by Johannes Vollmer, 1878.  
Source: Meyers Großes Konversations Lexikon / 6. Auflage (1905–1909).

that alters its “well-ordered façade” at the crossing points, imprinting a new skyline and greater ornamental detail. In the Friedrichstraße station case, we can verify how Johannes Vollmer doubles the height of the railway façade, decorating its refined brick masonry with columns, friezes, cornices, terracotta jewels, rosettes and other types of adornments, dramatizing the key signs of the Rundbogenstil style through two levels of rounded arches that take on “eyebrows” over the windows and inverted battlements under the eaves [fig.11].



It is precisely under this architectural condition that the Stadtbahn configures the facing<sup>15</sup> of the streets adjacent to the train line, defining the paths and pertaining elements from these road structures. It is noted that the railway arcade is parallelly positioned to the pre-existing urban pediment, thus establishing a linear morphological relationship. That is, the façade of the railway viaduct together with that of the diametrically opposite buildings, constitutes “*more or less narrow and linear spaces destined for the circulation of people and vehicles, which are framed between diverse constructions where all types of settlements favorable to the performance of daily activities are found.*”<sup>16</sup> This way, the Stadtbahn conceives morphologies that string together the different areas of the city along its trajectory, participating in the configuration of the road system of the center of Berlin. It is a road network adjacent to the railway, composed by main axes for automobile traffic use and/or secondary roads dedicated, exclusively, to pedestrian traffic.

[Fig. 12] Perspectives of the Dircksenstraße Street area.  
Source: Google Earth & Photographic register of the author.

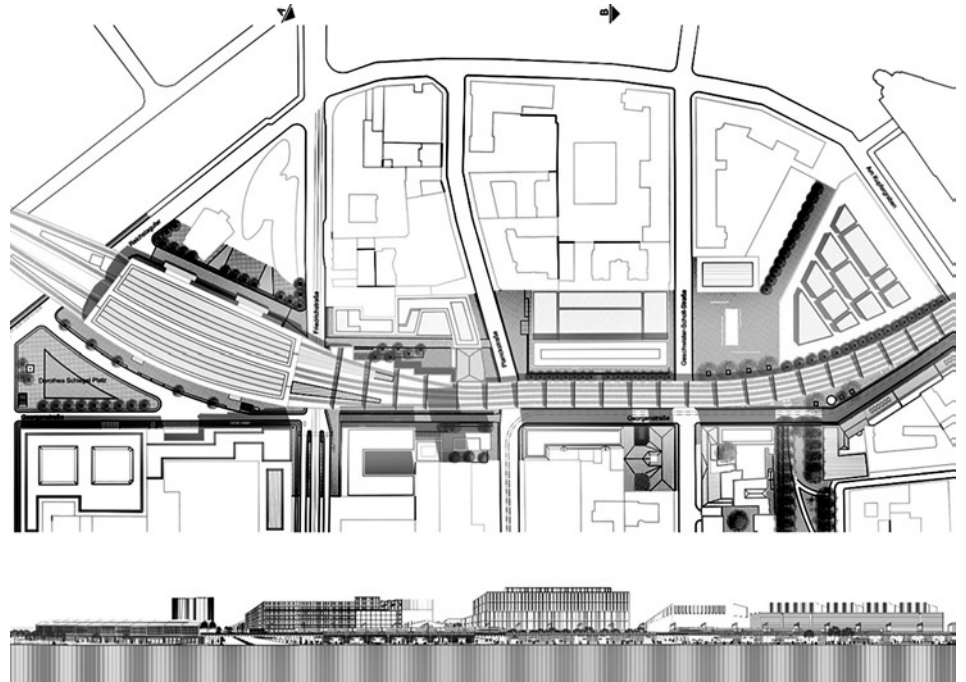


We can observe “infrastructural borders” where the public space presents itself as an *urban canal*, which unfolds between the segregated road and the architectonic walls of the Berlin city blocks, configuring a kind of hybrid conduit flanked by chains of built elements with highly uneven edges: one being an *infrastructural model* and the other an *ensanche model*. That is, on one side is the uniformly distributed chain of the railway arcade, with Neo-Romanesque aesthetics and 14 feet of height; and on the other, the chain with building cornices of 5 to 6 floors of the Berlin blocks, in which 19th century architectural exemplars together with entirely contemporary interventions are found [fig.12]. These linear structures cushion the relationship between the segregated transport infrastructure and the built environment, allowing the railway viaduct to act in partnership with the border building and not as an isolated chain. This is because “*streets are the indispensable condition for relating architecture in the city. They create an intermediate stage in which the buildings are understood as part of a set and not only as isolated objects.*”<sup>17</sup> This way, they

15 The term facing is understood as the surface of all the vertical constructive elements, walls, or stretches of walls. In many occasions, reference is made to the facing as the surface of a wall. The face or surface that looks towards the exterior of the building is called facing. Auguste Choisy (2003), “*El arte de construir en Roma*”, Madrid, Ed. Reverté.

16 RAPOPORT, Amos (1987). “Pedestrian Street Use: Culture and Perception.” In Moudon, A.V, Public Streets for Public Use. New York: Van Nostrand Reinhold Company Inc.

17 PARCERISA, Josep (2000). *La ciudad no es una hoja en blanco*. Chile: Ediciones ARQ, pg 17.



[Fig. 13] Urban plan & South elevation of the Stadtbahn between Friedrichstraße Station and the so-called Island of Museums (Georgenstraße Street), 2016.

Source: Author's fieldwork realized in situ with collaboration of Ignacia Larrain.

relate the ground floor of the railway arcade with that of the surrounding buildings, providing an exchange of uses and activities, which, on many occasions, transforms the primary function of the street as a space of transit and communication, rich in social, economic and cultural interaction (Bazant, 2010: 14). We refer to examples such as Georgenstraße that borders the railway viaduct on south side between the Friedrichstraße station and the so-called Island of Museums and the pedestrian promenade that doubles the same route along the north façade of the Stadtbahn [fig.13]. There, the *building-viaduct* functions as an architectural body “imprisoned” by these two neighboring roads, outlining a kind of “street separator” - 14 feet high and 15 meters wide - that mediates the morphological configuration of both transit axes through its “well-ordered façade” [fig.13].

In the axonometric drawing [fig. 14], it is possible to show how the ground floor of the hotels, libraries, offices and university institutions on Georgenstraße Street and its corresponding pedestrian axis, interact with the commercial programs, located on the ground floor of the railway arcade, configuring multi-functional public spaces at the edges of the segregated transport infrastructure. A good example of this is the section between Friedrichstraße and Planckstraße, which has a commercial plinth on the ground floor of the NH Collection Hotel and the Berlin International Shopping Center. This infrastructure is linked with the commercial and gastronomic programs installed on the ground floor of the railway viaduct, formalizing a strip of public space that serves as a display space for the antique shop Berliner Antikmarkt, as well as a terrace for the arches of Café Leon, the Tex-Mex brewery and the iconic Nolle restaurant [fig.14 left column]. It is a kind of pedestrian promenade with some nocturnal activity, also used as a catwalk for some of the social events of the Harald Glöcker shop [fig.14 left column].

Between Planckstraße and Geschwister-Scholl-Straße we find the building of the Department of Rehabilitation Sciences, which, together with the Institute of Social Sciences, comprises the expansion of the Humboldt University in Berlin. This university block also adjoins the south façade of the railway viaduct through the sidewalks of Georgenstraße, where the terraces of Pure Origins Estate Coffee and Wonderpots Frozen Yogurt are located [fig.14 right column]. Such programs offer student work areas inside the arches, responding to university demand, along with the Sprintout Digitaldruck plotter center, located at the junction with Geschwister-Scholl-Straße [fig.14 right column]. The arches of the Bey Leder and Lotto boutiques, the Da Vinci restaurant and the Sushi Miyabi are joined to this



**FILIFE TEMTEM**

Building the urban physiognomy  
of Berlin through  
the "well-ordered facade"  
of the Stadtbahn



[Fig. 14] Axonometric cut of the area between Friedrichstraße Station and the so-called Island of Museums (2016) where the occupation of the ground floor of the railway viaduct and respective surrounding buildings is detailed.

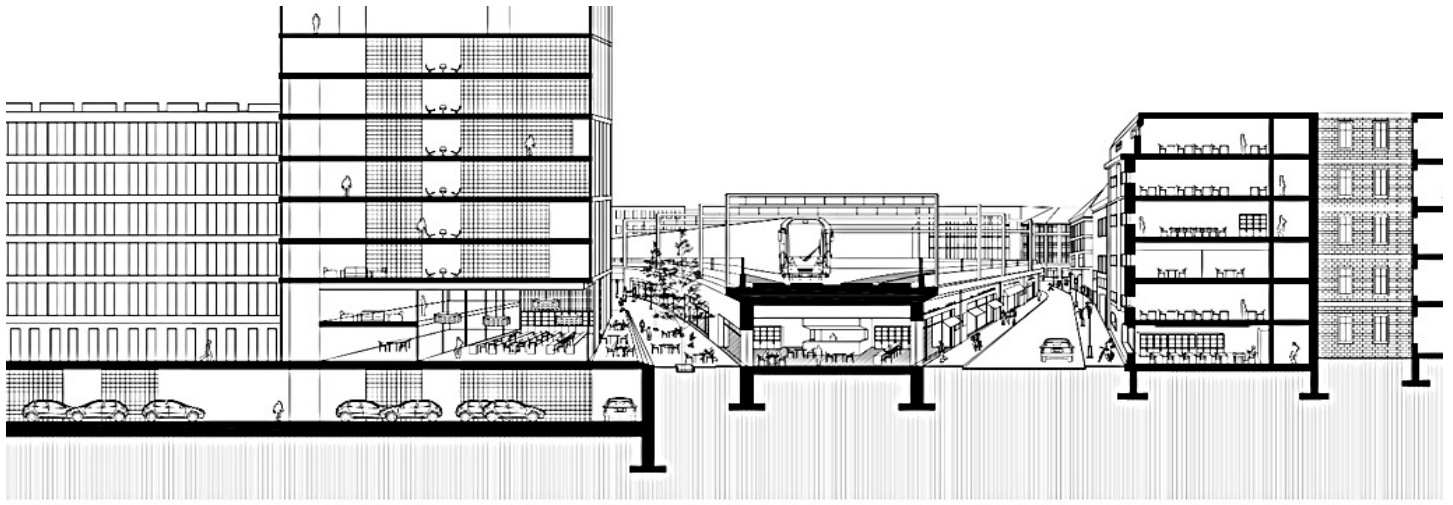
Source: Author's fieldwork realized in situ with collaboration of Ignacia Larrain.

complex, which have second entrances on the north side of the train line, offering their services in the pedestrian street flanked by the Stadtbahn and the Jacob and Wilhelm Grimm Center. Through the section (fig. 15), one can observe how this building takes advantage of the pedestrianization of the axis parallel to the railway to create a wide esplanade of access to the library, aligning the height of its ground floor with that of the railway viaduct. This way, some of the spaces on the ground floor open directly to the pedestrian street, allowing it to be used as a bicycle parking lot for the users who also occupy the terraces of the cafes and restaurants of the railway arcade, as a space for informal outdoor reading [fig.15].

Between Geschwister-Scholl-Straße and Kupfergraben, the dining area continues to dynamise the sidewalks of Georgenstraße, occupying it with tables, chairs and some parasols from Deponie No. 3 brewery, Café Chagall, the OASE cocktail bar, and the emblematic restaurant 12 Apostel (fig.14 upper column). Here we find a kind of boulevard that extends to the banks of the River Spree, anticipating the cultural attraction of the Island of Museums. It is a strip with a great tourist, also serving as a gastronomic hub for visitors to the Art Center of Berlin, as well as to the offices and departments of the Art and Visual History of Humboldt University, located on the opposite path. In this section, most students and workers of the area gather to buy their articles of daily use, also taking advantage of the park that borders the west facade of the department to have picnics and participate in summer events.

Finally, the far eastern end of the street - between Reichstagufer and Friedrichstraße - where the distance between the walls of the railway arcade and the Berlin city blocks widens, considerably, to cross the Spree River, forming Dorothea Schlegel-Platz, an "island-type square, characterized by being located in the center of the vehicular channel with separate flows according to the direction of transit"<sup>18</sup>. That is to say, "a public space resulting from the widening of a section or part of the street,

18 VELASQUEZ DE GONZALEZ, Carmen and MELENDEZ URDANETA, Ledy A. (2003). "La morfología y los usos de las plazas urbanas y parroquiales de la ciudad de Maracaibo". *Revista de Ciencias Humanas y Sociales* [online], vol.19, n.40, pg. 69-87. Available at: <[http://www.scielo.org.ve/scielo.php?script=sci\\_arttext&pid=S101215872003000100005&lng=es&nrm=iso](http://www.scielo.org.ve/scielo.php?script=sci_arttext&pid=S101215872003000100005&lng=es&nrm=iso)>. ISSN 1012-1587.



[Fig. 15] Cross-section through Georgenstraße Street at the Jacob and Wilhelm Grimm center + Perspectives of the pedestrian street flanked by the Stadtbahn and the Jacob and Wilhelm Grimm center, 2016.

Source: Author's fieldwork realized in situ with collaboration of Ignacia Larrain.

which (...) occurs between important buildings because of their architecture and/or the function they contain"<sup>19</sup> [fig. 16]. In this case, the current Friedrichstraße Station building (after having undergone several remodeling and expansion projects), which, with its abundant shops, supermarkets, restaurants, cafés and other facilities [fig. 14 downer column] adapts itself to the various demands of the passersby, conferring to this "triangular island" an unbelievable urban activity. It is a kind of mall, whose programmatic diversity enhances the use of public space adjacent to the segregated road, turning it into a platform for meetings, enjoyment and leisure for all Berliners. That is, "the station plaza where, at around noon time, all kinds of people are sitting (...): businessmen, foreigners, ladies traveling alone, groups of upwardly mobile families, artists, dubious characters, an enigmatic grouping..."<sup>20</sup>

This way, the Georgenstraße path comes to an end, confirming the existence of a linear succession of urban events that transform the edges of the segregated transport infrastructure into a multi-functional public space, narrowly delimited by a strong density of programs and services that encourage encounters and the movement of citizens, as well as social, economic and cultural exchange (Jacobs: 1961). In other words, these are urban events that transform the typical "edges or linear boundaries that the observer does not use or does not consider (...) in paths and ways that the observer potentially follows (...) through the concentration of diverse uses or activities"<sup>21</sup>. We can say that the immediate surroundings of the Berlin railway area do not destroy the neighborhoods to the point of turning them into social frontiers - as happens in most of the segregated infrastructures implemented in the contemporary city -, but, on the contrary, they activate axes of urban life together with the railroad. They function as a kind of "lateral airbag" to the transport infrastructure, avoiding adverse impacts on the use and value of the adjacent land since these accept the concepts of street-corridor and the enclosed public space that would come to be rejected by rationalist urbanism (Lemus: 2005). Hence, they perpetuate the meaning of the traditional street, understood as an *urban canal* delimited by walls and/or physical barriers that maximize and vitalize the use of the public space through the associated programmatic use. We refer to

19 CLEMENTE MARROQUIN, Beatriz (2007). *Espacios Públicos de Hermosillo de 1997 al 2007*. Director, Dr. José Luis Moreno Vázquez (Master Thesis). Sonora College. Urban Environmental Studies.

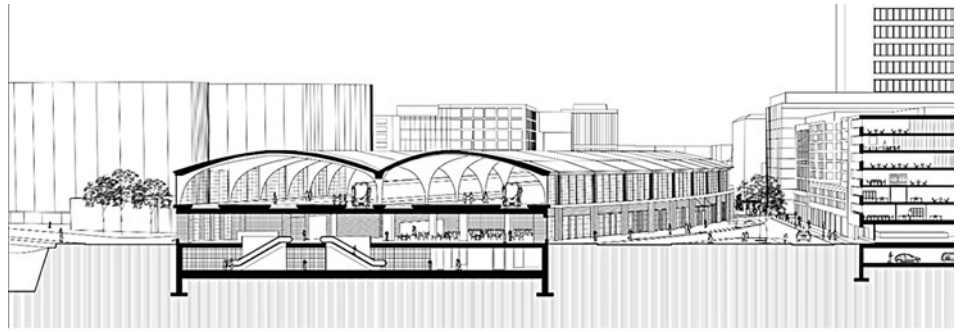
20 HEINE, Heinrich (1866). *De IAllemagne Volume: 1*. Paris: Michel Lévy Frères.

21 LYNCH, Kevin (1960). *The Image of the City*. Boston: Mass, USA. MIT Press.



**FILIFE TEMTEM**

Building the urban physiognomy  
of Berlin through  
the “well-ordered facade”  
of the Stadtbahn



[Fig. 16] Cross-section & Perspective through  
Georgenstraße Street at the Friedrichstraße  
Station (Dorothea Schlegel-Platz Square),  
2016.

Source: Author's fieldwork realized in situ with  
collaboration of Ignacia Larrain.

*“streets that serve for many things apart from enduring the passage of vehicles; and pedestrian strolls (...) that have many other uses in addition to enduring the passage of the pedestrians. Uses that are not directly identified with circulation but closely related to it, (...) being very important for the good functioning of the city”<sup>22</sup>.*

Under this lens, we can conclude that the roads bordering the Stadtbahn diffuse the “border effect” - usually associated with the implementation of segregated transport infrastructure in the city, breaking the “curse of border vacuums”, enunciated by Jane Jacobs (1961) in her text, “The Death and Life of Great American Cities”. That is to say, they erase the perception of railroad borders as closed and sterile spaces that, according to the author, promote the disintegration of the territory, the social bonds and the daily activities. We can, therefore, affirm that the design adopted by the Berlin railway viaduct planners, undermines the *paradigm of linear causality* (Miralles-Guasch: 2002)— which draws “lines” in the territory without taking into account the dynamics, needs and patterns of urban life that exist at the local level - replacing it with the *paradigm of dialectics* (Potrykowski & Taylor: 1984) — that stimulates the construction of productive relationships between the territory and the system of segregated mobility. This is due to the capacity of the *building-viaduct* to function as an “engineering system” for circulation and mobility, but also as an “architectural system” capable of building the urban physiognomy of Berlin through its “well-ordered façade”. We speak of “an eloquent intervention capable of clarifying the value that architecture adds to these constructions, originated as exact answers to concrete problems, (...) penetrating in an increasingly unavoidably multi-disciplinary work field, where the contribution of the architects to the problem of infrastructure still appears as a diffuse figure.”<sup>23</sup>

22 JACOBS, Jane (1961). *Vida y Muerte de las grandes ciudades*. Madrid: Ediciones Península.

23 ASCHER, François (2005). “Arquitectura de infraestructura: Ciudades con velocidades múltiples, un desafío para arquitectos, urbanistas y políticos”, *ARQ*, No. 60, jul, pg. 1.

### Bibliography

Alfaro d'Alençon, Paola (2103). *The production of urban space through mobility: The Case of the Stadtbahn in Berlin*. Santiago: Pontificia Universidad Católica de Chile.

Allen, Stan (1999). *Points and Lines: Diagrams and Projects for the City*. New York: Princeton Architectural Press.

- Ascher, François (2005). "Arquitectura de infraestructura: Ciudades con velocidades múltiples, un desafío para arquitectos, urbanistas y políticos", *ARQ*, No. 60. jul.
- Bazant, Jan (2010). *Espacios urbanos, historia, teoría y diseño*. México: Limusa.
- Boberg, Jochen; Fichter, Tilman; Gillen, Eckhart (1984). *Exerzierfeld der Moderne: Industriekultur in Berlin im 19. Jahrhundert*. München: C.H. Beck Verlag.
- Clemente Marroquin, Beatriz (2007). *Espacios Públicos de Hermosillo de 1997 al 2007*. Director, Dr. José Luis Moreno Vázquez (Tesis Maestría). Colegio de Sonora. Estudios urbanos ambientales.
- Curl, James Stevens. *Georgian Architecture*. England Newton Abbot [England]: David & Charles, 2002.
- Comas, Carlos Eduardo. *Monumentalizing Modern Mobility in LC2015 - Le Corbusier, 50 years later, 2015*. Available at: <http://ocs.editorial.upv.es/index.php/LC2015/LC2015/paper/view/949>.
- Frampton, K. (1995). *Estudios de una cultura tectónica*. Cambridge: MIT Press, MA.
- Gottwaldt, Alfred B.; Handke, Stefan. *Berliner Historische Ansichten. Band 3. Berlin Stadtbahn*. Berlin: Marion Hildebrand Verlag, 1998.
- Hegemann, Werner (1988). *Das steinerne Berlin. 1930, Geschichte der größten Mietkasernenstadt der Welt*. Frankfurt a. M.: Vieweg-Verlag.
- Hoffmann-Axthelm, Dieter (1984). *Arbeitsgruppe Berliner S-Bahn (Edit.) (1984), Die Berliner S-Bahn*. Berlin: Ästhetik und Kommunikation Verlag.
- Heine, Heinrich (1866). *De IÁllemagne Volume: 1*. Paris: Michel Lévy Frères.
- Jacobs, Jane (1961). *Vida y Muerte de las grandes ciudades*. Madrid: Ediciones Península.
- Lamas, José Manuel. Ressano Garcia (1992). *Morfología urbana e desenho da cidade*. Lisboa: Fundação Calouste Gulbenkian.
- Lemus, Carlos Bell (2005). *El movimiento moderno en Barranquilla: muestra de arquitectura 1946-1964*. Univ. Nacional de Colombia.
- Lynch, Kevin (1960). *The Image of the City*. Boston: Mass, EE.UU. MIT Press.
- Mallgrave, H. F. (1993). *Otto Wagner. Reflections on the Raiment of modernity*. Santa Mónica: Getty Center.
- Miralles-Guasch, C. (2002). *Ciudad y transporte. El binomio imperfecto*. Barcelona: Ariel.
- Orth, August (1871). *Berliner Centralbahn. Eisenbahnproject zur Verbindung der Berliner Bahnhöfe nach der innern Stadt*. Berlin, Verlag von Ernst & Korn.
- Parcerisa, Josep (2000). *La ciudad no es una hoja en blanco*. Chile: Ediciones ARQ.
- Petti Pinheiro, Eloisa. "Modernas formas Modernas y sus reflejos en Brasil 1920-1960". *Revista Perspectiva Urbanas* n° 9 [online], 2008. Disponible en: <https://dialnet.unirioja.es/servlet/articulo?codigo=4038291>.
- Potrykowski, M., Taylor, Z. (1984). *Geografía del transporte*, Barcelona: Editorial Ariel.
- Pizza, A., Pla, M. *Viena\_Berlin. Teoría, arte y arquitectura entre los siglos XIX y XX*. Barcelona: Etsab, Edicions de la UPC, 2002.
- Rapoport, Amos. "Pedestrian Street Use: Culture and Perception." In Moudon, A.V, *Public Streets for Public Use*. New York: Van Nostrand Reinhold Company Inc, 1987.
- Schachinger, Erika (1984), in: *Arbeitsgruppe Berliner S-Bahn (Edit.) (1984), Die Berliner S-Bahn, Berlin, Ästhetik und Kommunikation Verlag*.
- 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).
- Schievelbusch, Wolfgang (1986). *The Railway Journey – The Industrialization of time and Space in the 19th Century*. Berkeley, Los Angeles, California: The University of California Press.
- Sky, Allison & Stone, Michelle. "Unbuilt America: Forgotten Architecture in the United States from Thomas Jefferson to the Space Age". *ARLIS/NA Newsletter* 5, no. 1, December 1976.
- Von Der Leyen, Alfred (1982). *Berlin und seine Eisenbahnen 1846-1896*. Berlin: Ästhetik und Kommunikation Verlag.
- Wagner, Otto (1993). *La arquitectura de nuestro tiempo. Una guía para los jóvenes arquitectos*. Madrid: El Croquis Editorial.
- Velasquez de Gonzalez, C. y Melendez Urdaneta, L.A. (2003). "La morfología y los usos de las plazas urbanas y parroquiales de la ciudad de Maracaibo". *Revista de Ciencias Humanas y Sociales* [online], vol.19, n.40.