

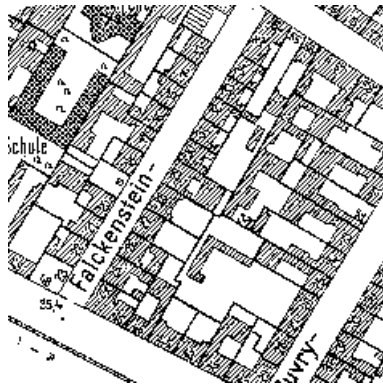
06.07 Urban Structure (Edition 1995)

Overview

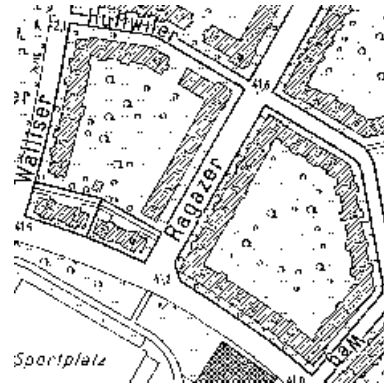
Both the natural landscape and the development of urban settlement have made their mark on the urban structure of Berlin.

The appearance of Berlin changed most markedly at the end of the previous century, as the city developed into an industrial center. With increasing work opportunities, many people came to Berlin, and a growing need for housing was the result. The building activity was regulated by development plans and building codes, in which street limit lines, the size of the blocks, the minimum size of courtyards and the floor spaces of buildings were stipulated. Thus, Berlin's typical dense block development with a courtyard structure emerged between 1880 and 1918 within the City Rail Circle Line. It was interspersed only by scattered decorative squares and parks, and by cemeteries.

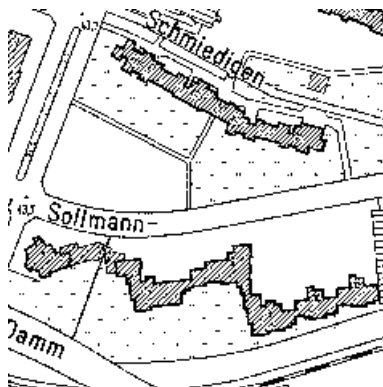
In the then-suburbs (such as Friedenau) the building code of 1892 permitted a lesser degree of property exploitation than in the inner city. In these areas, lower and somewhat more generously-planned block developments emerged, with decorative features and a garden-court structure, as well as villa development.



Closed block development (up to 1914), including integrated blocks with preservation-oriented rehabilitation



Large greened quadrangles or with loose rows (development of the '20s and '30s, or the '50s and '60s)



High-rise residential areas on the outskirts (development of the '70s and '80s), with generously designed green fringes between the buildings

Fig. 1: Berlin's Urban Development during Three Periods

New designs developed extensively only after 1918, when the construction of wings and rear buildings was forbidden by law. At the same time, public housing construction companies took over from private builders the role as main actors in the area of residential construction. They replaced the until-then prevalent lot-by-lot development with the construction of larger, coherent subdivisions outside the Circle Line, in what was then the outskirts. This development was favored by the 1920 consolidation of Berlin with its surrounding communities to form Greater Berlin, which made uniform planning possible.

Also, the open spaces associated with housing developments were accorded greater significance, which was manifest in the greater size, usefulness and design of these open spaces, but also in the designing of public open space. Later, the large public parks and allotment garden facilities emerged, which extended in a ring shape around the turn-of-the-century inner-city core.

Massive destruction during World War II and the political division of Berlin in 1948 influenced the further course of urban development. Some 30% of all buildings had been destroyed totally or severely damaged.

West Berlin received economic aid as part of the reconstruction program (Marshall Plan). As a result, the war-time destruction could be eliminated quickly by large-scale building activity during the fifties and sixties. In the inner city, vacant lots caused by the war were closed, and whole blocks were reshaped by large-scale reconstruction and by de-coring coupled with demolition and new building construction. The developmental goals were at that time the relief of the density of inner-city development and the dispersion of municipal functions. In the outskirts, large new self-contained subdivisions emerged with relatively high shares of open space, and with industrial areas on former open spaces between old village cores. During the seventies, construction policy concentrated on the revival of the inner city. Building activity was limited essentially to small vacant lots scattered throughout West Berlin, and on the preservation-oriented reconstruction of existing structures.

In **East Berlin**, which received no economic support, but was, on the contrary, burdened by reparations, reconstruction began on a large scale only after construction of the Wall in 1961 and with the industrialization of the East Berlin construction industry. The emphasis during the sixties was on the recreation of the center of the city on areas wiped out and cleared as the result of the war. At that time, the long-term plan was to tear down the entire pre-war building stock as the inheritance of capitalism, and to replace it with developments built in the socialist architectural style. Relatively little new living space was created during the fifties and sixties. In 1971, therefore, the housing program was proclaimed as the main focus of the social program. The large satellite towns of Marzahn, Hellersdorf etc. were erected on the outskirts of town by means of industrial prefabrication. At the same time, the existing old-building stock was once again considered living space worthy of preservation, and was rehabilitated with varying degrees of intensity.

Remainders of agriculturally-used areas as well as landscapes characterized by water and forest have remained undeveloped to this day: These include the Köpenick Forest in the southeast of Berlin between the Spree and the Dahme, the Grunewald Forest in the west, along the Havel, as well as large intact agricultural areas in the northeast of the city. Some residential areas with their forest and orchard stands, such as the Uncle-Tom development in Zehlendorf, show signs of the previous landscape character of the area. Of the once-plentiful brooks, culverts and wet-lands, only a few can still be found.

Over the course of time, a multilayered structure of construction and open space has emerged in Berlin. On the present map, the various urban structural types are delimited and described. They are based on various area types, which are defined according to their typical use, time of origin and construction, and open-space structure. For reasons of representability, they have been grouped together into urban structural types.

The knowledge of these various structural types forms an essential basis of all urban development and landscape-planning standards, both at the local and at higher levels. However, this knowledge also permits information to be derived regarding the formation of biotopes and vegetation structures, climate relationships, condition of the soil, and the degree of soil impermeability, and the new formation of groundwater.

Statistical Base

For the registration of the area types, a multitude of different statistical bases were used.

This is based on the **area types** created in 1988 for West Berlin for the working file of the Environmental Information System (Umweltinformationssystem - UIS) of the Berlin Department of Urban Development and Environmental Protection. Their differentiation is based on the categorization of the 1981 **Map of Open-space Types for the Blocks**, which was compiled as the basis for the Berlin Landscape Program. The categorization criteria for distinction of the various open-space types were construction and free-space structure, age of the buildings, and use.

The most important statistical source was **infrared aerial photography** from the aerial operation of August 1990, which exists in two different resolution standards: one for West Berlin and the area close to the former border, at a scale of 1:4,000 and for the area of East Berlin at a scale of 1:6,000.

The **Umweltatlas (Environmental Atlas) Maps 06.01 "Actual Use of Built-up Areas,"** and **06.02 "Inventory of Green and Open Spaces,"** were compiled simultaneously with the present map in the years 1990-'91, and record the actual land use of Berlin on the basis of 21 different classes (cf. Tab. 1).

Tab. 1: Use Categories of the Umweltatlas Maps 06.01 and 06.02	
Actual Use of the Built-up Areas	Inventory of Green and Open Spaces
Residential area	Forest
Mixed area I	Meadows and pastures
Mixed area II	Farmland
Core area	Park / green space
Small business / industrial area	City square / promenade
Public facilities / special use	Cemetery
Utilities areas	Allotment gardens
Traffic areas	Vacant areas
Weekend cottage area	Campground
Construction site	Sports facility / outdoor swimming pool
	Tree nursery / horticulture

Tab. 1: Use Categories of the Umweltatlas Maps 06.01 and 06.02

These classes are shown according to the predominant use at block or block-segment level.

Especially for West Berlin, the 1989 **Maps of Uniform-use Block Segments** were additionally used to update the area types. They are shown on the basis of the maps of Berlin at a scale of 1:4,000. With the aid of these maps, the public facilities areas could, for example, be designated separately.

For East Berlin further statistical bases were used: The **Maps of Berlin** at a scale of 1:5,000 from the years 1968 to 1989, which show the construction structure of Berlin.

For clarification of the transferability of the area types defined in West Berlin, the expert study **Typical Development Structures of Residential Areas**, by the Institute for Urban Development and Architecture of the Construction Academy (ISA), 1990, which evaluated the so-called representative file, a file of the Data Base of Area Elements containing information on the construction structures of neighborhoods as of 1989 were used.

The maps **Age of Building Groups** and **Story-Structure of Residential Buildings**, are evaluations of the data base "Housing Policy and Building Stock," of the Institute for Urban Development and Architecture (ISA). They have been available for the individual boroughs at a scale of 1:10,000, in some cases also at 1:30,000, since 1991, and cover approx. 70% of the entire housing stock. The private housing stock is not covered. In the map "Age of Building Groups," the proportions of housing built before 1919, between 1919 and 1948, between 1949 and 1970, and after 1970 are shown in relation to the housing units at the level of the 904 neighborhoods. In the map Story-Structure of Residential Buildings, apartment buildings are grouped into categories of one or two floors, three or four floors, five floors, six to eight floors, nine to eleven floors and more than eleven floors.

For the eastern boroughs within the City Rail Circle Line, the **1988 map Building Ages**, at a scale of 1:10,000, shows the age of the buildings as broken down into eight categories.

The **Topographical Street Map** (military edition) of 1986 -1989 (scale 1:10,000), and the Land Use Maps of the boroughs (inventory), permit differentiation of common-use areas.

Methodology

The system of the area types defined for West Berlin was revised for transferability to East Berlin. There were in no major changes necessary.

The fundamental differentiation is between area types of predominantly residential use and area types with other uses.

The **area types of predominantly residential use** were further broken down according to their typical construction and open-space structure and their dates of construction.

In addition, each area type is described by its soil-impermeability (i.e., "sealing") percentage, percentage of built-up surface area, and its distribution of differently permeable surface covers (cf. Map 01.02 SenStadtUm 1993).

Altogether, 60 different area types were designated, and were assessed and represented on basis of the categories in the UIS records. The categories correspond to the statistical blocks, which were further subdivided, in cases of different use within a block, into uniform-use block segments.

For display in the present map, similar area types were grouped together to form a **structure-type group**. The assignment to structure types is shown in Table 2.

Tab. 2: Assignment of Similar Area Types to Structure-Type Groups	
Structure Type	Area Type
Structure Types with Predominantly Residential Use	
(1) Late 19th-century block development with wings and rear buildings	Closed courtyard Courtyard Preservation-oriented reconstruction
(2) Late 19th-century block-edge development with few wings / rear buildings	Decorative and garden court Shed court
(3) Late 19th-century block-edge development with major changes	Postwar block-edge Reconstruction by de-coring
(4) Twenties and thirties block-edge and row development	Large court Twenties and thirties row
(5) Fifties and later row development	Fifties and later row
(6) Postwar high-rise development	Unplanned reconstruction High-rise
(7) Eighties and nineties block-edge or row development	Eighties and nineties pre-fab high-rise
(8) Low buildings with yards	Row yard Yard Open settlement development Weekend cottages
(9) Villa development with park-like gardens	Park-like garden
(10) Development with yards and semi-private re-greening	Yards and semi-private re-greening
(11) Village-like development	Village
Structure Types with Predominantly Commercial, Service, Small Business and Industrial Use	
Development with predominantly commercial and service use	Core area Excursion restaurant
Low development with predominantly small business and industrial use	Mixed area II with low development Small business area with low development Utilities area
Dense development with predominantly small business and industrial use	Mixed area II with dense development Small business area with dense development
Structure Types with Other Uses (Public Facilities, Traffic Areas, Construction Sites or Green and Open Spaces)	
Development with predominantly public facilities / special use, non-street traffic areas, or construction sites	Postal Law-enforcement Administrative Cultural School (old building) School (new building) School University and research Church Retirement home Hospital Child day care center Youth center Public facilities, misc. Airport Parking lot Railroad property Railroad embankments Other traffic areas Construction site
Little or non-built-up green and open spaces	Forest Agriculture Green space / park City square / promenade Cemetery Low-development allotment garden area High-development allotment garden area Allotment garden area, misc. Vacant areas Campground Sports facility Water sports Tree nursery / horticulture

Tab.2: Assignment of Similar Area Types to Structure Type Groups

The structure types with predominantly residential use occur only in blocks or block segments which are designated in the Map "Actual Use of Built-up Areas" as residential areas, or as Mixed Areas I (cf.

Statistical Base, Tab. 1). The structure types with predominantly commercial, service, small business and industrial use exist only in blocks or block segments of the classes Core Area, Mixed Area II, Small Business and Industrial Area, Utilities Areas and, in individual cases, Mixed Area I. The structure types with other uses occur in blocks or block segments of the categories Public Facilities / Special Use, Traffic Areas, Construction Sites, and of all categories of Map 06.02 "Inventory of Green and Open Spaces."

The 1988 **update for West Berlin** area types and the 1990 **expansion to the East Berlin urban area** were based on the Maps 06.01 "Actual Use of Built-up Areas," and 06.02 "Inventory of Green and Open Spaces." In West Berlin, if use had not changed since the first recording of area types (1988), the area type recorded at that time was adopted. Otherwise, it was newly determined with the aid of aerial photography and the maps of the uniform-use block segments.

For East Berlin, the sources listed above in the section "Statistical Base" were evaluated. In particular, many characteristic features of the construction structure, like building outline, position of the buildings within the block and limited building amount as well as age of the buildings, could be taken from the aerial photography and the ordnance survey maps. Also, the formation of the open spaces in non-built-up areas - with the exception of the type "closed courtyard" between very tightly built buildings - was clearly recognized. Also, the differentiation of traffic areas was as a rule accomplished by means of aerial photography.

Although the information in the building age maps did not refer to all apartment houses, and was also not building-specific by type and floor space, as in West Berlin, its precision sufficed as a rule for the determination of the area types.

The categories Mixed Area II and Small Business Area in the Map 06.01 "Actual Use of Built-up Areas" were differentiated using the development degree recorded in the impermeability map for different area types.

The subdivision of the category "Allotment Garden" into three area types was carried out for West Berlin on basis of the map and the list of the Berlin allotment garden colonies.

Fundamentally, a single block or block segment received only one area-type designation. If different area types existed within a block or block segment, such as "yard" and "fifties and later row," the dominant area type was chosen.

Structure Types with Predominantly Residential Use

Late 19th-century block development with wings and rear buildings

This construction structure is marked by closed or almost-closed, predominantly five to six-story block-edge development. According to this area type, the individual properties are built up along more than one, or even all, sides, with a front building, wings and a rear building. The development originated in the years 1870-1918. As part of the preservation-oriented reconstruction at the end of the seventies and in the eighties, former vacant lots were filled by new buildings, and old buildings were renovated. Demolition was carried out only in isolated cases. In East Berlin, the areas rehabilitated at the beginning of the seventies are included, in which relatively large-scale demolition of rear buildings and consolidation of courtyards was carried out.

The open-space structure is marked by crooked block interiors. These consist of entirely or largely enclosed, narrow courtyards, sometimes arranged in a row, and connected by court passages. The courtyards are mostly paved with concrete, asphalt or stone. Sometimes the building edges are planted with decorative flower beds, or single tree is found in the courtyard.

Late 19th-century block-edge development with few wings/rear buildings

In this construction structure, four-story, almost closed block-edge development predominates. The individual properties are built-up with a front building and wings or a rear building. The development emerged mainly between 1892 and 1918; in some cases, older buildings are integrated. The share of the "shed-court" type, which emerged before 1892 and consists mostly of two to three-story houses, some with a village-like structure, increased over time. The block edge is closed only partially. The individual properties are built-up in the rear with one- or two-story sheds.

The open-space structure is distinguished by front yards. The block interior is indented (with wings) or longitudinal (with rear buildings), and not subdivided by fences at the property boundaries. The block interior of the type "shed court" is further subdivided by closed courtyards, which are formed by walls and sheds. Cobblestone pavements prevail as the surface covering. At the edges of the court area,

spontaneous vegetation prevails. Industrial use is more frequent than garden and orchard use. With the type "decorative and garden court," on the other hand, the garden-like formation with fruit trees and flower beds dominates.

Late 19th-century block-edge development with major changes

This construction structure is marked by five to six-story, largely closed block-edge development, interspersed in some cases by entrances, parking lots and scattered vacant lots. This structure developed out of previous late 19th-century courtyard development. The high share of post-World-War-II new buildings at the block edges results from the closing of vacant lots (postwar block-edge) or is a consequence of rehabilitation measures, in which buildings with poor structural soundness were demolished and were replaced by new buildings. The courtyard structure of the "postwar block-edge" type was changed by demolition of individual rear buildings and, for the "reconstruction by de-coring" type, by demolition of nearly all rear buildings.

The open-space structure has a relatively open, coherent block interior, compared with the former courtyard development. In the area type "postwar block-edge," the block interior is subdivided by fences along the non-built-up property edges. In addition to the old late 19th-century court formations, one finds, in the new or restored courts, paved parking lot areas, in some cases with landscaped edges. In the type "reconstruction by de-coring," the block interior is often designed as a common space for residents, with playgrounds, paths, and easy-to-care-for green spaces.

Twenties and thirties block-edge and row development

The construction structure is mostly three to four-story, closed or almost-closed block-edge or open development with parallel longitudinal rows of houses. For exposure, the rows extend mainly in east-to-west direction. In some cases, the severity of the row development is loosened up by cross buildings at the block ends, or by a mixture of row and edge development. This area type emerged mainly in the twenties and early thirties.

The open-space structure is marked by large, coherent block quadrangles or by longitudinal, non-closed intervals between the rows. Typical is the distinctive landscaping, with green space areas and scattered trees, as well as hedges along the entrance areas and around the playgrounds and trash-can areas; in some cases, the courts are used as tenant gardens. A low proportion of paved area is typical, since the block interiors are not to be used as parking lots.

Fifties and later row development

In this construction structure, rows of four-story houses prevail. They were laid out initially mainly in an east-to-west direction; later, they were also built staggered in displaced order, or along curved blocks.

Relatively large, longitudinal, non-closed open spaces between the rows of houses characterize the open-space structure. About a third of the open space is used as parking lots and for access driveways. Ornamental green spaces with scattered trees and bushes predominate. Playgrounds, trash-can areas and parking lots are mostly lined by bushes and trees. In the developments built during the seventies, the share of green space was reduced in favor of raised flower beds along broad access driveways.

Postwar high-rise development

Large, high rows and single houses with varying floor-spaces mark the construction structure. The type "high-rise" means at least eight floors in West Berlin, and at least six floors in East Berlin. For the West Berlin types "unplanned reconstruction" and "high-rise," the order of the buildings within the block appears open, without recognizable rules. The pre-fab concrete buildings laid out in East Berlin as large-scale developments were built partly in semi-open block-edge style, and partly mixed with row development. The area type "unplanned reconstruction" emerged after 1945 on blocks of former late 19th-century block-edge development, while the type "high-rise" emerged in West Berlin predominantly during the sixties and seventies, and in East Berlin during the seventies and the beginning of the eighties, mostly in the form of large-scale developments.

The open-space structure of the large-scale developments in East Berlin in semi-open block-edge development of the type "high-rise" displays a relatively large block interior, which is partly broken up by building rows in the block interior. For the type "unplanned reconstruction," undeveloped areas are used relatively sparingly, mostly as parking lots; the remaining open areas are green edge-strips. The share of the non-built-up areas is relatively large for the type "high-rise." Half of the area is paved by

large access driveways and parking lots, the other half is landscaped as ornamental green space, geometrically designed with trees and shrubs.

Eighties and nineties block-edge or row development

Three to five-story, semi-open or closed block-edge development, or a mixture of rows and block-edge development in pre-fab concrete-type construction characterize the construction structure. These large-scale developments were built in East Berlin during the eighties and nineties.

The open-space structure consists of relatively large open spaces. The block interior is partly subdivided by building rows. Approx. a third of the non-built-up area is used as parking lots or for access driveways; otherwise, ornamental green spaces with landscaped trees and bushes predominate.

Low buildings with yards

Mostly one to two-story developments with rowhouses and closely-built semi-detached houses, single family houses and smaller apartment houses or weekend cottages characterize this construction structure. Until 1945, the buildings were built around the block edge along a uniform building line. After the war, the rowhouses were frequently staggered along access streets and walkways in the block interior, and the single family houses were erected at irregular distances from the street and, ever more frequently, in the rear of the property, as second houses (hammer-shaped lot). With this type of "open settlement development", single-family houses, workshops, garages and summer homes appeared at various times, without any planning.

The open-space structure of settlements erected before the war of the types "row-yards" and "yards" is marked by uniformly broad front yards and a large block interior, which is broken up only by property enclosures. With all other settlements of this type, the block interior is interspersed with houses. The non-built-up areas are as a rule used as fruit, vegetable, or ornamental gardens.

Villa development with park-like gardens

Predominantly two-story, open block-edge developments with villas behind a uniform building line mark the construction structure. For the buildings, which emerged between 1890 and 1930, a large building volume is typical.

The open-space structure is marked by uniformly broad front yards and the large block interior, and property enclosures with dense hedges or old masonry. The large yard properties have old tree populations on green spaces, in some cases also vegetable gardens and flower beds.

Development with yards and semi-private re-greening

This construction structure is marked by open, multi-story block development with rental and studio apartment houses between single family houses and villas. This type has emerged since 1950 by demolition and condensation of the development of the types "yards" and "park-like garden."

A block interior interspersed by larger buildings characterizes the open-space structure. The non-built-up areas are used as yards, or are landscaped uniformly with creepers and ornamental bushes, with pathways reinforced by concrete pavement, and parking lots as well as by gravel strips surrounding the houses.

Village-like development

This construction structure can be described as mostly one or two-story - or, near the city, multistory - development. Between the houses of the former village cores, new buildings of different size have emerged.

The open-space structure is characterized by the preservation of such village elements as the lay-out of the streets, the village green, the village pond, the manor park, or the church grave-yard. The open spaces are used as vegetable gardens or orchards, garden cafés, warehouses for commercial enterprises, workshops etc..

Structure Types with Predominantly Commercial, Service, Small Business and Industrial Use

Development with predominantly commercial and service use

Typically; this type has a high, 75-100% proportion of commercial and service enterprise. The "core area" type is as a rule built very compactly, and occurs mainly in the center of Berlin. The non-built-up parts of the core areas are used intensively, mostly as supply areas and as car parking spaces for staff members, customers and visitors; accordingly, they are often reinforced with asphalt, concrete or stone pavement systems. The area type "excursion restaurants" covers larger excursion restaurants in rest areas. For the non-built-up areas of this area type, large terraces, yards and access driveways, as well as many parking spaces for cars are typical.

Low development with predominantly small business and industrial use

These areas are marked by industrial development with predominantly one or two-story halls and building complexes and generous marginal areas. Under the category "utilities areas," this also includes the buildings and property areas of the electricity, gas, water and sewage works, the sanitation department and others. Residential use is largely absent. The properties are at most 50% built-up. The large, non-built-up areas serve for storage, as shipment areas for goods, or as car and truck parking spaces. Large, unused, mostly vegetation-covered areas also occur.

Dense development with predominantly small business and industrial use

The main feature of these areas is industrial use. The property areas are built-up to more than 50% with multi-story, predominantly industrial and industrially-used buildings. One finds commercial complexes with factory lofts, factory lofts in rear buildings and wings, or lots with industrial buildings. The non-built-up area is intensively used for delivery traffic and is accordingly paved to a very great degree. These heavily built-up industrial areas frequently emerged during the late 19th century.

Structure Types with Other Uses (Public Facilities, Traffic Areas, Construction Sites or Green and Open Spaces)

According to these structure types, all areas designated as "public facilities / special use," "traffic areas," or "construction sites" block and/or block segments in the Map 06.01 "Actual Use of Built-up Areas" are grouped together into one structure-type category, and all green and open-space inventory use types shown in Map 06.02 "Inventory of Green and Open Spaces" are grouped together to form a further structure type (cf. Tab. 2).

The construction carried out in West Berlin during the eighties and nineties was fitted into the existing structure types. For instance, the IBA buildings on Lindenstrasse in the borough of Kreuzberg are classed as area type "reconstruction by de-coring." The development on Osdorfer Strasse at Lichterfelder Ring was assigned to the area type "fifties and later row."

Some area types appear only in East or only in West Berlin. The area type "closed courtyard" is included under the area-type "courtyard" in East Berlin. The area type "reconstruction by de-coring" exists only in West Berlin, since in East Berlin, fewer court buildings were torn down. Also, the area type "unplanned reconstruction" developed only in West Berlin. On the other hand, the type "concrete pre-fab development" emerged in the eighties and nineties only in East Berlin. The area type "open development" was reintroduced. In West Berlin, it occurs only rarely, and was included mostly under the type "yard."

Map Description

The eleven **structure types with predominantly residential use** cover over half of the area of Berlin (58%).

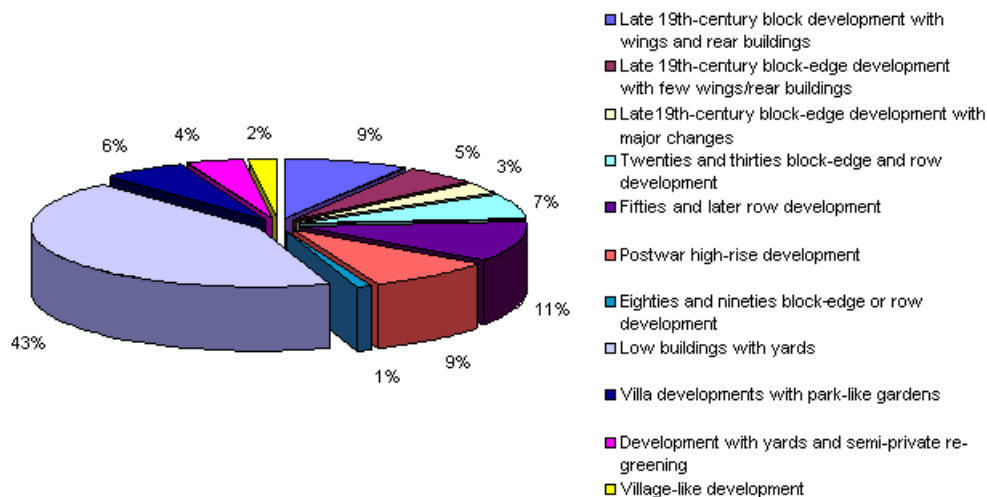


Fig. 2: Shares of Structure Types with Predominantly Residential Use in their Total Area, in Percent

With 43%, "low buildings with yards" accounts for by far the largest share of residential areas, followed by "fifties and later row" (11%). "Block-edge" and "eighties and nineties row" have the smallest shares (1%) (cf. Fig. 2).

In terms of the distribution among the Berlin boroughs, a different picture emerges, however (cf. Fig. 3).

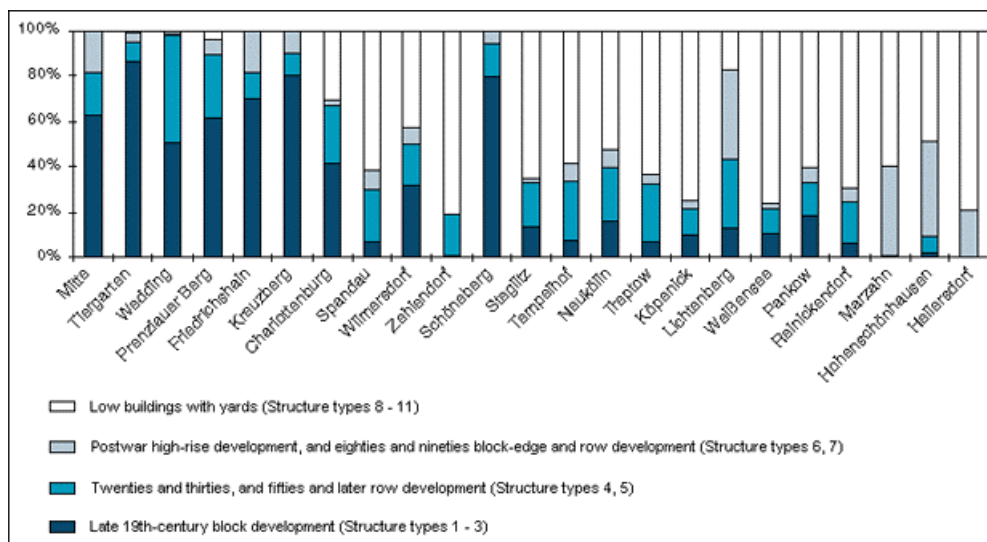


Fig. 3: Shares of the Structure Types with Predominantly Residential Use in their Total Area, in the Berlin Boroughs, in Percent

In Tiergarten, Kreuzberg and Schöneberg, a relatively high share of the residential area - approx. 80% - is preserved as late 19th-century block development, much of which has, however, been altered massively. In the borough of Wedding, late 19th-century block development and row development account for half the residential area. The borough of Reinickendorf has, with 465 ha, the greatest share of row-type construction, followed by Spandau and Neukölln. The high-rise development of the postwar era occurs is no where to be found in the borough of Zehlendorf, but is an outstandingly high share of approx. 40% in the boroughs of Lichtenberg, Marzahn and Hellersdorf. The low buildings with yards structure is entirely absent in the inner-city boroughs of Mitte, Friedrichshain, Kreuzberg and Schöneberg, while accounting for approx. three-fourths of the residential area in the outskirts boroughs Zehlendorf, Köpenick, Weissensee and Hellersdorf.

One finds the **late 19th-century closed block development with wings and rear buildings**, hardly changed since their origin, in large parts Charlottenburg and Wilmerdorf between the Lietzensee (Lake), Kurfürstendamm, Richard-Wagner-Strasse and Spandauer Damm. The narrow development with the typical courtyard structure has also survived to a large degree in Moabit and Wedding, in

Friedrichshain between the City Rail Circle Line and Petersburger/Warschauer Strasse, as well as in the boroughs of Kreuzberg, Neukölln and Schöneberg between the corridors Neukölln Schiffahrtskanal (Ship Canal), Skalitzer Strasse, Gitschiner / Karl-Marx-Strasse, Gneisenaustrasse, Yorckstrasse and Potsdamer/Hauptstrasse.

One finds the **late 19th-century closed development with few wings / rear buildings**, including the area types "decorative/garden court" and "shed court," in the former suburbs of Berlin outside the City Rail Circle Line. This construction structure, too, has hardly changed since its origin. Large areas exist in Friedenau, Steglitz, Tempelhof, Friedrichshagen, Oberschöneweide, Karlshorst, Pankow, Niederschönhausen, Spandau and in the borough of Reinickendorf west of Provinzstrasse.

Large areas of **late 19th-century closed block-edge development with major changes**, which emerged as the result of war-time destruction and reconstruction, or of reconstruction with massive demolition of late 19th-century block development, are found within the City Rail Circle Line, particularly in Charlottenburg between Otto-Suhr-Allee and Bismarckstrasse and along Spandauer Damm, in Tiergarten around the Spree Bend and Invalidenstrasse, and south of the Landwehrkanal (Canal) around Potsdamer Strasse, in Wedding between the City Rail line between Nordbahnhof, Gesundbrunnen and Bernauer Strasse, and in Friedrichshain west of the Warschauer / Petersburger Strasse corridor and, east of these streets, in the area of Frankfurter Allee. Also in the boroughs of Schöneberg and Wilmersdorf, there are many areas in which the typical late 19th-century courtyard structure was changed significantly by reconstruction and renovation.

Fig. 4 shows the late 19th-century structure types "late 19th-century block development with wings and rear buildings" and "late 19th-century block development with major changes" differentiated according to their area types at the borough level for selected boroughs. In the eastern boroughs Mitte, Prenzlauer Berg and Friedrichshain, the area type "closed courtyard" does not appear, since it was recorded under the type "courtyard."

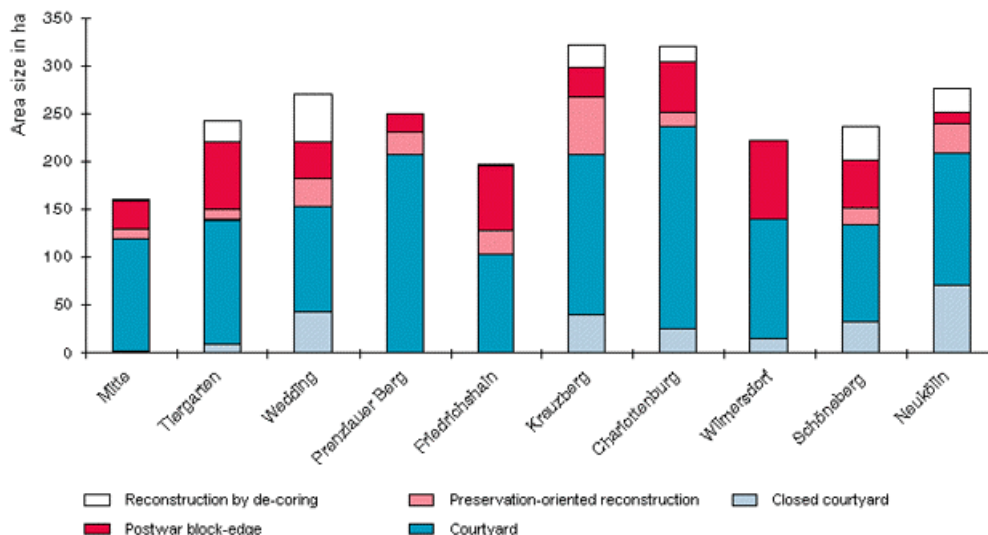


Fig. 4: Area Distribution of Various Late 19th-century Area Types, in ha

In the boroughs of Prenzlauer Berg, Kreuzberg, Charlottenburg and Neukölln, very much late 19th-century development of the area types "closed courtyard" and "courtyard" - over 200 ha in area - is still preserved in its original form. The share of very dense development of the type "closed courtyard" is relatively high in Neukölln, Wedding and Kreuzberg. Late 19th-century preservation-oriented reconstruction, under which the original block structures were largely preserved, occurred most prominently in the borough of Kreuzberg. In the boroughs of Tiergarten, Friedrichshain and Wilmersdorf, war-damaged late 19th-century block development was largely eliminated and replaced, particularly by new buildings of the "postwar block-edge" type. "Late 19th-century development with major changes" and "reconstruction by de-coring" became increasingly common in the borough of Wedding.

The **twenties and thirties block-edge and row development** type is found mainly outside the City Rail Circle Line. Frequently, the rows and large courts were erected in neighborhoods dominated by the "late 19th-century block-edge development with few wings and rear buildings" type, at the edge of the former suburbs of Berlin. They are as a rule connected to the City Rail and subway network.

The **fifties and later row** developments were erected mostly in the Berlin outskirts, outside the City Rail Circle Line. They were laid out on former open spaces (agriculture areas, etc.) without regard to existing transportation corridors or construction structures. Within the Circle Line, formerly built-up areas were replaced by row development. This includes large areas in the boroughs of Kreuzberg, Mitte and Friedrichshain, but isolated areas with row development on top of former late 19th-century block structure also exist in other inner-city boroughs.

One finds **postwar high-rise development** of the "unplanned reconstruction" type in the western boroughs within the City Rail Circle Line. Large areas of this type exist in the borough of Wilmersdorf around Bundesallee, in the borough of Schöneberg in the area of Nollendorfplatz and Kleiststrasse, and in Kreuzberg between Wilhelmstrasse and Stresemannstrasse. Otherwise the high-rise development of the postwar era occurred within the City Rail Circle Line only in the boroughs Kreuzberg, Mitte and Friedrichshain. Here smaller developments of the area type "high-rise" emerged. As a rule, the high-rise developments were erected outside the City Rail Circle Line. Such large complexes erected in West Berlin include Gropiusstadt in Neukölln, developments in Lichtenrade, Marienfelde, Lichterfelde and Spandau as well as the Märkische Viertel in Reinickendorf. In East Berlin the largest developments are found in Hohenschönhausen, Marzahn, Hellersdorf and Lichtenberg.

The **eighties and nineties block-edge and row development** of the pre-fab concrete construction type occurs mainly in Hellersdorf and Marzahn. Smaller settlements were built in Köpenick and Hohenschönhausen.

Construction structures with yards are as a rule found only on the outskirts of town. These **low**, single-family and duplex **houses with yards** are to be found in the entire outskirts area.

The **villa development with park-like gardens** emerged mainly during the late 19th-century in scenically attractive areas; this has hardly changed since then. One finds larger areas of this type near the Grunewald Forest in Nikolassee, Zehlendorf, Dahlem and Grunewald, in Lichterfelde, near the Tegel Forest in Hermsdorf and Frohnau, along the Dahme at Grünau, and in the area the Müggelspree at Rahnsdorf.

Development with yards and semi-private re-greening, in which villa development and/or low single family houses are interspersed with larger rental and studio-apartment houses, occurs mainly in the southern urban area, particularly in the transitional areas between villas and single family housing in West Lichterfelde and Zehlendorf.

Village-like development is still preserved on the outskirts of town only in the old village cores; in the eastern boroughs more and larger village structures can generally be found.

One finds the **development with predominantly commercial and service use** frequently in the old central business districts of the various parts of town. This applies particularly to both the city center areas of West and East Berlin concentrated around the Kurfürstendamm / Tauentzienstrasse and/or around the Alexanderplatz / Friedrichstrasse.

Structure types with predominantly small business and industrial use are concentrated along waterways and railroad lines. **Heavily built-up** small business areas occur less frequently than small business areas with **low development**.

Development with predominantly public facilities and special use is to be found relatively evenly distributed throughout the urban area. Obviously, **green and open spaces** are more available in the outskirts area than in the inner city. As **traffic areas**, the airports Tempelhof and Tegel, and the right-of-ways of the City Rail lines stand out.

Detailed information about structure types which do not serve predominantly the residential use are found in the Umweltatlas Maps 06.01 "Actual Use of Built-up Areas" and 06.02 "Inventory of Green and Open Spaces".

Literature

[1] AGU Arbeitsgemeinschaft Umweltplanung 1988:

Fortschreibung und Übernahme der Versiegelungskarte des Umwelt-atlasses in das räumliche Bezugssystem des ökologischen Planungsinstruments Berlin (öPB), im Auftrag der Senatsverwaltung für Stadtentwicklung und Umweltschutz Berlin, Berlin.

- [2] **AGU Arbeitsgemeinschaft Umweltplanung 1990:**
Datenrecherche und methodische Grundlagen zur Übertragung der Umweltatlaskarten 06.01 und 06.02 auf das Ost-Berliner Stadtgebiet, im Auftrag der Senatsverwaltung für Stadtentwicklung und Umweltschutz Berlin, Berlin.
- [3] **AGU Arbeitsgemeinschaft Umweltplanung 1991:**
Fortschreibung der ökologischen Planungsgrundlagen Berlin: Erstellung der Umweltatlaskarten 06.01 Reale Nutzung der bebauten Flächen, 06.02 Grün- und Freiflächenbestand, 01.02 Versiegelung (einschließlich Bebauungsgrad) für das Stadtgebiet der östlichen Bezirke und Integration in das Umweltinformationssystem (UIS), im Auftrag der Senatsverwaltung für Stadtentwicklung und Umweltschutz Berlin, Berlin.
- [4] **Bezirksämter (Ost-Berlin), 1990/91:**
Flächennutzungskarten der Bezirke (Bestand), 1:5 000, Berlin.
- [5] **ISA (Institut für Städtebau und Architektur der Bauakademie) 1990:**
Typische Bebauungsstrukturen von Wohngebieten, Berlin.
- [6] **Kühne, G. 1992:**
Baugeschichte nach dem II. Weltkrieg, in: Berlin-Handbuch, Das Lexikon der Bundeshauptstadt, Presse- und Informationsamt des Landes Berlin (Hrsg.), Berlin.
- [7] **planland - Planungsgruppe Landschaftsentwicklung 1991:**
Erläuterungstext zur Aktualisierung der Umweltatlaskarten 06.01 Reale Nutzung der bebauten Flächen, 06.02 Grün- und Freiflächenbestand, 06.03 Freiflächenentwicklung und der Versiegelungsdateien, im Auftrag der Senatsverwaltung für Stadtentwicklung und Umweltschutz Berlin, Berlin.
- [8] **SenBauWohn (Senatsverwaltung für Bau- und Wohnungswesen Berlin) (Hrsg.) 1990:**
Stadterneuerung Berlin, Erfahrungen, Beispiele, Perspektiven, Berlin.
- [9] **SenStadtUm (Der Senator für Stadtentwicklung und Umweltschutz Berlin) (Hrsg.) 1985a:**
Umweltatlas Berlin, Bd. 2, Karte 06.01 Reale Nutzung der bebauten Flächen, 1:50 000, Berlin.
- [10] **SenStadtUm (Der Senator für Stadtentwicklung und Umweltschutz Berlin) (Hrsg.) 1985b:**
Umweltatlas Berlin, Bd. 2, Karte 06.02 Grün- und Freiflächenbestand, 1:50 000, Berlin.
- [11] **SenStadtUm (Senatsverwaltung für Stadtentwicklung und Umweltschutz Berlin) 1989a:**
Karte und Liste der Berliner Kleingartenkolonien , 1:25 000, Berlin.
- [12] **SenStadtUm (Senatsverwaltung für Stadtentwicklung und Umweltschutz Berlin) 1989b:**
Karten der nutzungshomogenen Blockteillflächen, 1:4 000, Berlin.
- [13] **SenStadtUm (Senatsverwaltung für Stadtentwicklung und Umweltschutz Berlin) 1990:**
Städtebauliche Entwicklung Berlins, Karte Gebäudealter 1988, 1:10 000, Berlin.
- [14] **SenStadtUm (Senatsverwaltung für Stadtentwicklung und Umweltschutz Berlin) (Hrsg.) 1991:**
Datenspeicher Wohnungspolitik, Gebäudespeicher, Karten Geschossigkeit der Wohnbauten und Karten Baualtersgruppen, 1:10 000, z. T. 1:30 000, Berlin.
- [15] **SenStadtUm (Senatsverwaltung für Stadtentwicklung und Umweltschutz Berlin) (Hrsg.) 1995a:**
Umweltatlas Berlin, aktualisierte und erweiterte Ausgabe, Bd. 3, Karte 06.01 Reale Nutzung der bebauten Flächen, 1:50 000, Berlin.
- [16] **SenStadtUm (Senatsverwaltung für Stadtentwicklung und Umweltschutz Berlin) (Hrsg.) 1995b:**
Umweltatlas Berlin, aktualisierte und erweiterte Ausgabe, Bd. 3, Karte 06.02 Grün- und Freiflächenbestand, 1:50 000, Berlin.
- [17] **Wünsche, G., Wellmann, C., Frank, H. 1981:**
Gestaltbereiche, Analyse und Bewertung der bebauten Bereiche hinsichtlich ihrer natürlichen Ausstattung und deren Funktion und Bedeutung für das Landschaftsbild, Text zur Karte Freiraumtypen der Blöcke, im Auftrag des Senators für Bau- und Wohnungswesen Berlin, Berlin.

Maps

- [18] **Ministerium für nationale Verteidigung (Hrsg.) 1986-89:**
Topographischer Stadtplan (AS + AV), diverse Blätter, 1:10 000, Berlin.
- [19] **SenBauWohn (Senatsverwaltung für Bau- und Wohnungswesen Berlin) (Hrsg.) 1990a:**
CIR Luftbilder, 1:4 000, Befliegung 1990, Berlin.
- [20] **SenBauWohn (Senatsverwaltung für Bau- und Wohnungswesen Berlin) (Hrsg.) 1990b:**
CIR Luftbilder, 1:6 000, Befliegung 1990, Berlin.
- [21] **SenStadtUm (Senatsverwaltung für Stadtentwicklung und Umweltschutz Berlin) (Hrsg.) 1993:**
Umweltatlas Berlin, aktualisierte und erweiterte Ausgabe, Karte 01.02 Versiegelung, 1:50 000, Berlin.