Greening in narrow urban spaces. An urban development concept for the old town of Berlin-Spandau

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Abstract. Since October 2015 the government of the federal republic of Germany is developing a national dialogue on the future development of the National Strategy for Sustainability made in 2016. The development is marked by the Agenda 2030 which was adopted by the United Nations for Sustainable Development in 2015. Therefore, the major global challenges must be addressed by all means of sustainable development, trying to reduce hunger, poverty, lack of education as well as environmental and climate issues. All these objectives are addressed to all member states of the European Union, which raises the question: How can the new global sustainability goals be implemented at the national level? What has to happen in Germany to further promote sustainable development? The article focuses on the objective of sustainable urban development in Germany, exemplifying the case oft he oldtown of Berlin-Spandau, a district of the City of Berlin. Firstly, the priority objectives will be demonstrated, later on implementation strategies will be explained. The practical application will be demonstrated after a short, theoretical introduction. Thie project itself was realized under the supervision of the author at the University of Hamburg and demonstrates strategies of greening that not only improve the climate of the city but also reinforce social cohesion through its planning measures.

Keywords: Urban Greening, Urban Planning, Berlin, Sustainability, Germany.

Introduction

In recent years, an exponential population growth had to be registered. Since the year 2008, more people lived in cities than in the countryside. As a result, many large cities are increasingly expanding at the expense of green and open spaces, in order to meet the demand for space and, in particular, the demand for housing (Gabot 2012). This development must be counteracted, as green areas have a positive impact on the urban climate and the human wellbeing. In the future, the increasing demands on urban areas have to be coordinated through new ideas and concepts. Here, particularly densely compacted spaces identify a major challenge for the integration of urban green. This raises the following

questions: How can cities protect their green spaces, despite the enormous pressure on areas? How can new green spaces be created in already heavily compacted areas? How can the open space planning be firmly anchored in the future urban planning processes? What are the demands placed on urban greening and what qualities does it offer?

Offering a certain basis for the further course of the article, two current topics of the recent urban development in Germany will be explained in the following sections. This includes the land competition in cities and housing supply. In the further course of the articel, the topics "Green in the City" and "Living Values of Urban Development" will be explained, by that reflecting the importance of green areas in cities.

Land use competition in cities:

Floor areas are generally used very differently. For example, agriculture and forests play an important role in the land area, while urban and metropolitan utilization play the major role in metropolitan regions. In Germany, 114 hectares of land are used each day for settlements and transport purposes. In addition, there are industrial, mining and nature conservation areas. The problem that arises with the use of floor space is that they can always be used only for a single specific purpose. In addition, the floor surface is basically finite and can not be increased. The result is the emergence of a strong competition on area utilization. Facing this challenge, the urban planning is obliged to question and find out the most useful use of an area again and again. Furthermore, for many years, public spaces and floor areas are not in public property anymore. Nowadays, the land area belongs to the state area and is subject to the right of ownership (Menzel 2008).

Housing supply

Due to the relaxed housing markets in Germany in the past, housing policy has received less attention. The result is a decline in construction in the larger cities, which has lead to a shortage of the general offerings of housing. In addition to the quantitative deficits, the issue of sustainability is becoming increasingly important in the context of a housing supply. The special requirements on the stocks of housing, and thus their quality, have become more extensive. Here, climate protection and energy saving are important topics in the energy rehabilitation of existing means of housing.

Also the increased demand for affordable housing with additional support and service offers is becoming has invreased significantly in the course of growing the demographic development in Germany. Furthermore, the volume of support services for of 12% of all households shows, how expensive the housing market is, especially for the financially weak. Thus, it has to be concluded, that the housing supply is currently an acute topic in urban planning which has to be controlled by means of politics (Kort-Weiher 2011).

Methods and structure of the project

The project took place during the winter semester in 2016/2017, which means from October of the year 2016 until February of the year 2017. The key research question was defined by the Federal Institute for Urban Building and Spatial Research in Berlin and worked out in collaboration with the University of Hamburg, Department for Urban Planning.

In favour of processing the key research question, different thematic maps were made, which were based on own local observations and desk research. Until the final presentation of the work results, in February 2017, certain milestones were defined and scheduled. The project contained the following steps:

First, a theoretical research was conducted, which focused on theoretical foundations about the topic of urban green. The central challenge was to integrate the topic of urban green in confined spaces and find suitable design options. All the specified research was supplemented by literature on the latest topics of city planning. The results depicted the most important topics and new ideas for solutions. Hereupon they were linked with the local conditions to develop new adjusted solutions for the study area.

In a second step, an inventory was conducted, which contained two dérives and observations of the historic district of Spandau. A dérive represents a concept of psychogeography and describes the unplanned, situationist procedure of the agitation through the urban space to perceive an area unprejudiced.

The next step was the analysis of the collected data. The analysis looked at both the urban as well as the social spatial infrastructure. Within the procedure of the analysis, various information was collected and numerous analysis maps were created.

In a third phase an inventory oft he existing urban green in the old town of Spandau was made. The existing city green in the historical center of Spandau consists of isolated trees and facade greening in the courtyards. Most noticeable were these many green facades

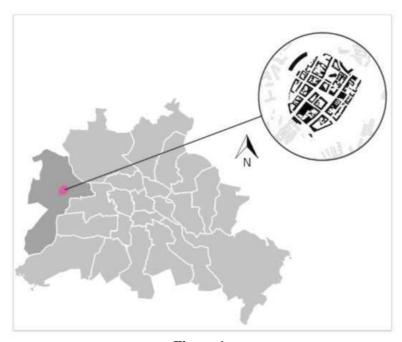


Figure 1. Figure ground plan of Berlin-Spandau.

overgrown with ivy, most of them in the courtyards and some in the front of the buildings. After a short conversation with a neighboring resident, it was found out that the reason why the facades are greened is to protect the facades against graffiti. All green spaces included the trees and the green facades have been mapped. In further investigations for more potential green spaces in the historical center of Spandau the different states of the roofs were analyzed. In the following projectwork suitable areas for selective roof greening were identified. These areas have also been mapped. Especially noticeable is the big roof surface of the "Karstadt" department store. Although there are just a few green spaces in the historical center, the center itself is surroundes by green spaces.

As a result of the analysis a general principle for spatial planning was created, which served as a guide for the concept work. The developed concept, in turn, contained one overarching concept and six various thematic areas.

In the final step, a second scenario was made to identify possible future trends, which could be caused by the compiled concept and could in addition no longer be processed within the frame of the project.

All the projects' phaseses were summarized in a conclucion on how urban green can respond to the needs of sustainable urban development in Germany and Europe. The example of Berlin-Spandau is therefore to be seen as a role model for urban situations that require solutions for spatial competion due to densed use of city spaces.

Localization and recent situation of Berlin-Spandau

The area of investigation Spandau-Oldtown, the historical center of Spandau, is located in Berlin, the capital city of Germany. Spandau-Oldtown belongs to the city district Spandau in western Berlin and is situated on the Havel river. Spandau is one of the main centers of Berlin (Senatsverwaltung für Stadtentwicklung und Umwelt 2015). The history of Spandau is older than the history of Berlin and is marked by its medieval past (Berlin.de). The figureground diagram shows the medieval basic structure of the historical center of Spandau, which is characterized by a large central plaza, the traditional enclosed block-situation with courtyards, high building density and typical narrow streets.

Today the city is famous for its historical sights like the citadel of Spandau, the churches St. Nikolai and St. Marien, the city hall of Spandau and a part of the remaining old city wall.

The largest pedestrian zone in Berlin is also located in the historical center of Spandau (Berlin.de) It is embossed by over 300 different public-specific ground-floor usages like retail trade, gastronomy, cultural institutions and service providers (Partner für Spandau Gesellschaft für Bezirks-Marketing mbH). The paved pedestrian zone has an old-town charme, but there is a lack of seating accommodations and too little greenery, like everywhere else in town. Many feasts and events are regularly organized in Spandau-Oldtown spread throughout the year.

The most popular venues are the reformation square, the central plaza and the town hall market square. These places are sealed public plazas with a low quality of stay when no event takes place. The reformation square has only a few green spaces and they are all separated by fences. The seating possibilities in all the plazas in the historical center are not very inviting. The existing seating accommodations look out of place and do not fit together. They are partly demaged, vandalised with grafitti and dirty. Altogether it can be said, that Spandauoldtown has just a few public green spaces in its center, which is also characteristic for a medieval city.

Oldtown-Spandau is framed by green corridors along the river Mill Ditch ("Mühlengraben") in the east and the river "Havel" with an inlet of the "Spree" river in the west. The greened waterfront "Shore of Limes" ("Lindenufer") along the Havel river was redone with the collaboration of local residents in numerous citizen participation processes. The remodeling ended in the year 2016. (Bezirksamt Spandau von Berlin). The grafittis and dirty walls on the "Shore of Limes"are conspicuous. A quay wall with railings along the "Lindenufer" acts like a barrier between water and promenade, which makes the Havel river not experiencable. The old mill ditch is situated at a lower level than its accompanying pedestrian route. At some places fences and the steep and craggy slope a long the sides prevent the direct access to the water. All along the mill

ditch some places are not accessable because of fences. Most parts of the green spaces are inaccessible.

The full existing potential of local recreation in Oldtown-Spandau is untapped because of missing possibilities to experience the water and the low quality of lingering in the shore

Not only the blue- and green areas act like a spatial barrier, the existing traffic infrastructure acts similar. The main street "Am Juliusturm" is situated at the north of Spandau-Oldtown and connects the city district Spandau with the center of Berlin. In the west it culminates in the street "Altstädter Ring".

The streets course follows the perimeter of the former city wall. The extent and the high frequency of the roads also build a spatial barrier, which separates the historical city center in the north and the west. The spatial boundary in the south of the area is defined by exposed railway network. Within the city the large pedestrian zone predominates, with its small side streets. The historical center of Spandau is very well connected to the public transport system by the underground, rapid trains and busses.

Spandau-Oldtown is characterized by both residential and mixed use. The residential use is mainly situated in the western and eastern areas along the green corridors and the waters "Mill Ditch" and the Havel river. Retail trade spaces in the ground floors concentrate mainly in the core of the area. For example in the roads "Carl-Schurz-Straße" and "Breite Straße" which belong to the large pedestrian zone (Senatsverwaltung für Stadtentwicklung und Wohnen, 2016).

The city district Spandau is not only known for its historical center but also for its social problems. Spandau is a fast growing district in Berlin. In the year 2015 Spandau had almost 37.137 residents distributed over a surface area of 8,03 square kilometres (Senatsverwaltung für Stadtentwicklung und Wohnen - Berlin, p. 9). The largest cluster of inhabitants are in the working age between 25 and 65 years (Bezirksamt Spandau von Berlin 2013). The center of Spandau, which also includes the historical center, is more strongly affected by social problems than the rest of Berlin and the entire district Spandau.

This development is caused by the high unemployment rate (Bezirksamt Spandau von Berlin 2013, p.11) and a high proportion of foreigners with insuficient language knowledge (Bezirksamt von Spandau). Social district work and the strengthening of the integration should tend to improve against this trend. Many of social institutions are located in Spandau, for example the society for interculturally living together" ("Gesellschaft für Interkulturelles Zusammenlebene. e. V.") and church organisations.

In conclusion, it may be said that Spandau-Oldtown is able to offer a diverse mixed use along the pedestrian zone, a wide variety of events and historical sights. Out of witch potential meeting areas could be created. But on the other hand, the historical centre is separated at various levels to the outside.

The waters, the two main streets "Altstädter Ring" and "Am Juliusturm" and the railway network are spatial barriers and segregate the Spandau-Oldtown of significant historical and current places, like the citadel of Spandau. The result is an enclaved situation. Some of the

important functions get lost, like the possibility for animals to cross the interrupted green zones and corridors. The final aim is to break through the existing barriers and take the opportunity to develop the functions of the historical center of Spandau on the different levels.

The accessibility and possibility experience the waters and the existing green paces should be ensured. It is important to support the strengths of the area to encrease the value for the inhabitans of Spandau. The data shows that the historical center is located in a socially heavilly burdened social space. However, it is apparent that many social services are already in place. Through the urban planning measures meeting points and places in the public space are an urgent need to support the social connections of diffrent inhabitants of Spandau.

Selected Planning areas of Berlin-Spandau

The concept mainly consists in individual interventions at six different locations in the old town of Spandau. These interventions are

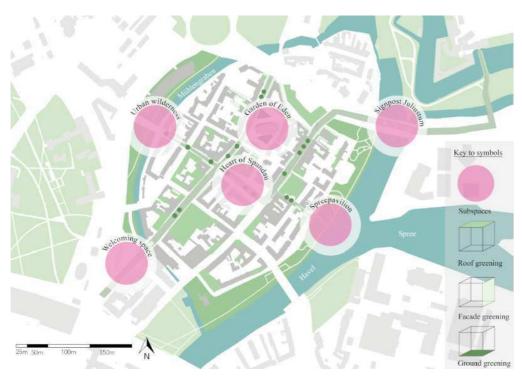


Figure 2. Model of intervention and creation of six thematical zones in the oldtown of Berlin-Spandau.



Figure 3. Model of the river "Mühlengraben" (rendering)

supposed to display the possibilities to establish various kinds of green in dense urban spaces with different circumstances and needs. Beside the three levels of greening, which will take place in every area, single solutions matching the respective spaces were developed. The mentioned interventions will be elaborated in the next sections.

Urban Wilderness

The Mill Ditch ("Mühlengraben") in its current state is rarely accessible and perceptible for residents and visitors. The revitalization of the stream is the first step to improve the the quality of water and green spaces. By creating a more natural landscape, the Mühlengraben will meet three needs in the old town of Spandau.

Firstly, it will provide a natural habitat of flora and fauna, which will be able to develop itself freely. Secondly, the stream will be used as an educational space to establish the natural awareness of the population. Partnerships with the local school and the new established "Spree river Pavillion"enable an improved understanding of the native wild life. Furthermore, the Mill Ditch will serve as a local recreation area and as a local meeting point which combines both the quality of green and of water.

The garden of Eden

The sealed Reformationsplatz has hardly any quality of stay and is characterized by the St. Nikolai church in the centre of the place. The planning of an communal garden will enliven the central and historical spot. A new group, formed by members of various institutions like the parish, the local school and refugee houses, will organize the planting of the garden. By that, the new community garden will help to combat prejudices and foster mutual understanding and will become a place of daily peaceful coexistence, mutual learning and recreation. Additionally an open kitchen beside the garden will create a space for common cooking and dinners and hence reinforce social cohesion.

The heart of Spandau

Because of the high sealing, the neglected seatings and the destructed playground, the marketplace of the old town of Spandau has an dull atmosphere and no quality of stay. The appearance of the marketplace will revalued by new homogeneous seatings, which can be moved flexibly. The playground will be renewed and a new water surface created. The water surface also functions as a playing field and can be drained if necessary.

The sealing will be broken up at certain spots and spaces for greening will be created. The weekly market therefore still can take place without any restrictions. The Marketplace will become an attractive public space and a vibrant central venue, promoting multiple social use.



Figure 4. Model of "the Garden of Eden" at Reformationsplatz in the oldtown of Berlin-Spandau.



Figure 5. Model of the heart of Spandau.

The Spreepavilion

The "Shore oft he Limes" (Lindenufer), situated on the river Havel, has just been renewed and functions as a local recreation area. A new established community house, the "Pavillion of the river Spree" (Spreepavilion), will empower the "Shore oft he Limes" as a local meeting point for everyone. The "Pavillion of the river Spree" has recreation rooms, a sun terrace with a view to the Havel and a roof top garden. It offers many various activities and is a starting point for outdoor activities like bicycle tours or public tours through the old town of Spandau. Originating from the community house, there will be green impulses in form of one-sided planted walls set at the "Shore oft he Limes". The unplanted side of the walls will be let free to get designed by young people. The primary objective of the "Pavillion of the river Spree"is

to bring different people together on a day-today basis and to enhance social interaction in a green environment.

The welcoming space

The space in front of the town hall functions as a connection between the city centre of the old town of Spandau and the public transport services. However, its complete sealing makes the place appearing not very welcoming. By installing planted walls, the place will be given a new shape which will lead arriving people into the city centre. In addition, there will be a rental service for green bicycles. These bicycles are equipped with a small green space, which can be merged depending on the number of bicycles. By that, social interaction will be supported and additional green brought into the old town of Spandau. The new greening

and planted seatings will encourage people to use the place and invites them to linger around.

Signpost Juliusturm

The Juliusturm bridge runs over the river Havel and connects the old town of Spandau and the citadel. In its current state the bridge is dominated by traffic and offers no quality of stay for pedestrians and cyclists. The quality of stay will be increased by planted roadside greenery. Furthermore, the bridge will be used as a viewpoint. Signposts on the ground will create perspective lines to historic buildings and green or blue spaces. Information boards will transmit knowledge about the shown sights. The purpose is to increase the attractiveness of the bridge and to lead more people to the old citadel.

Concept

The green corridors

The approaches to face the described challenges of "green in narrow spaces" are

presented in the following example the old town of Spandau. In addition to interventions at individual locations, the establishment of "green corridors" are the objective.

The "green corridors" run along the main connecting lines of the old town, as due to the circumstances of tight and sealed spaces, it is hardly possible to plant classical uncovered spaces on the ground. Therefore, the greening along the corridors takes place on three levels: the first level is the horizontal greening of roofs, the second level comprises a vertical greenery of building facades or walls. The third level includes the vertical greening of the ground, often by using flexible planting walls. The aim of the concept is to always implement at least one level of the greenery along the corridors, to create a green connection of the subspaces. For this type of greening, all the places were analyzed to identify potential areas. An exclusion criterion for facade and roof greening in many cases is the historical protection of of houses and buildings, a challenge that had to be dealt with. The basis for the green areas was set by the creation of a plant catalogue, which lists native trees, shrubs, climbing plants and herb plants which are to



Figure 6. Model of green spaces, green corridors and trees in the oldtown of Berlin-Spandau

use in the meant areas. These lists are to help laymen with finding suitable plants, aiming on the planting and maintenance done by the inhabitants of Spandau-Oldtown. The concept ist that the neighborhood management divides the green areas and gives the responsibility of planting to interested citizens. This leads to a better identification of the inhabitants with their own neighborhood and strengthes the social interactions.

The historical path

To create further connections within the area of Spandau-Oldtown, adventure paths which are highlighted by information boards and markings will be created. The historic past is visibly reflected in the old town of Spandau, especially in its medieval ground plan. Also many historical buildings such as fortifications, the citadel, the town hall, or the St. Nikolai church are well preserved. This particular identity of the district will be made by a historical path. In addition to information panels and flyers, apps will be used to promote the attraction of new interest groups. The reference here is the example of the app "Kulturpunkte Hamburg" (Cultural Points Hamburg) which has been designed by the ministry for cultural development of the city of Hamburg (Kulturbehörde in Hamburg) (Kulturbehörde Hamburg). Spontaneous, free and interactive exploration will thereby be supported in Spandau.

Financing and maintennace

In the following section of the text someof the developped ideas to support the financing will be presented. The financing concept fort he measures and maintenance of the greenery has been designed at different levels. As the measures of the concept affect public and private ownership, the main goal was to create high motivations for the citizens to participate in the financing of the greening measures. This refers in particular to the comercial part of Spandau-Oldtown: the shop owners are to be motivated of an economic advantage by the greening of their buildings. From an economic point of view, the greenery offers an attractive

and pleasant environment, which encourages the pedestrians to stay for a longer time in the central areas. This hence helps to win new customers.

The gastronomy also benefits from an attractive surrounding that makes people staying longer and concume more. Furthermore, tourism is benefiting from the upgrading of the public spaces, resulting in an increased value of the areas in Spandau Oldtown (Stadt Bruchsal 2015, p. 8 f.).

Next funding instruments are direct grants for private individuals, this also to achieve a higher spread of green space through private commitment (Optigrün). The inhabitants are thus given the opportunity to design their own neighbourhoods. In addition, sponsorships are planned for the plantings, especially in the form of "tree sponsorships". Oriented on the campaign that was launched by the ministry for environamental protection of Berlin in 2012, a concept of tree sponsoring has been created. The aim of the campaign was to increase the value of living in Berlin and to help promote climate protection by activating the entire population of Berlin by contributing to tree plantings. Private persons as individuals or groups are financing a tree for the amount of 500,00 euros and later on select a place and a tree species for their donated tree. Co-financed by the campaign it therefore will be planted. (see Senate Administration for Environment, Transport and Climate Protection). This campaign was highly successful in Berlin and will be implemented in an adapted way to Spandau-Oldtown.

A further financing possibility is the organization of planting projects in the district with the help of entrepreneurial sponsors. To give an example: unemployed people in the neighborhood will be involved in the practical greening realizations, with the aim of integrating them into long-term-jobs, of maintaining the greenery measures. These practices have been realized in other german cities like in Witten, here by the "Witten Society for Employment and Employment Promotion" (Wabe). The aim of the program is to promote disadvantaged urban districts and to improve social interaction. Projects like this are funded by the European Social Fund (ESF) and by the

Federal Ministry for the Environment, Nature Conservation, Construction and Nuclear Safety (BMUB) (Wabe).

Conclusion

The old town of Spandau offers a lot of positive locational factors, such as diverse commercial structures, an extensive gastronomic offer, numerous events and a historically embossed character. On the other hand, problems arise, such as a high degree of sealing or the lack of perceptibility of green and blue spaces. These negative factors are detrimental to the advantages of the site, as there are hardly any greenery and blue spaces inside the old town, which in turn means that the quality of life is reduced and therefore the number of residents and visitors will be decreasing on the long term.

In general, the displacement of green and blue spaces to the surrounding area, the large pedestrian zone and the historical basic structures have created an "enclave situation" that spatially separates the old town from its surroundings.

The structures of the Oldtown of Spandau do not adequately meet the needs of it's inhabitants and decreases communication and social participation. The public spaces are primarily used as transit spaces. In addition, there is an abundance of social problems such as a high unemployment rate, child poverty, a high number of migrants. These problems however have to be faced by social district work and political influence. Nevertheless, the planning presented greening measures contribute to enable the new areas functioning as places of social exchange and cohesion.

Using the example of the Oldtown of Spandau, the concept of the "green corridors" along main connecting axes placed on the three surface levels (roof, facade, ground) serves as a model for other strongly sealed and historically embossed cities. By specifically planting the main connecting axes and using other open space planning measures, such as the realization of a community garden or the renaturation of the watercourse of the "Shore of the Limes" and the rivers "Spree" and

"Havel", highly compressed public space is given a dynamic and future-oriented quality of habitation. Complementary tools, like the plant catalogue and the creation of a historical path, support the increasing of the identification with a place, giving it character, atmosphere and by that a higher quality of staying. For those planning measures an important necessity is the intense involvement of the population, giving the inhabitants the possibility to adapt the public spaces to their own future needs.

All in all, the explained barriers are broken by the presented planning concept. It initiates the "blossoming" of a neighbourhood both spatially and interpersonally.

References

Berlin.de (n. y.): Altstadt Spandau.URL: https://www.berlin.de/ba-spandau/ueberden- bezirk/tourismus/sehenswertes/ artikel.288600.php (retrieved on: 18.05.2017).

Berlin Stadt Service (n. y.): Geschichte von Spandau. URL: h t t p : / / w w w. berlinstadtservice.de/xinh/Spandau Geschichte.html (retrieved on: 17.05.2017).

Bezirksamt Spandau von Berlin (n. y.): Bevölkerung. URL: https://www. berlin.de/ba-spandau/ueber- d e n bezirk/zahlen-und-fakten/statistischedaten/artikel.194906.php (retrieved 17.05.2017).

Bezirksamt Spandau von Berlin (2013): Bezirksregionenprofil - Spandau Mitte. https://www.berlin.de/baspandau/ assets/politik-und-verwaltung/ service-und- organisationseinheiten/ sozialraumorientierteplanungskoordination/pa130303 bezirksregionenprofil spandau mitte hohe qualitat.pdf(retrieved on: 26.02.2017).

Bezirksamt Spandau von Berlin a (2017): Das neue Lindenufer – Entwicklungskonzept. http://www.lindenuferspandau.de/das-neue-lindenufer/ entwicklungskonzept.html (retrieved on:18.05.2017).

Geschichtswerkstatt Billstedt (n. y.) 'Der Billstedter Geschichtspfad'. URL:

- http://www.geschichtswerkstatt-billstedt.de/ pages/geschichtspfad.php?lang=DE (retrieved on: 18.05.2017).
- GIZ Berlin (n. y.): Aufgaben und Ziele. URL: https://giz.berlin/about-giz/aufgaben-undziele.htm (retrieved on: 05.03.2017).
- Kulturbehörde Hamburg (n. v.) 'Kulturpunkte-App-Mobiles Kulturportal Hamburg' URL:http://www.hamburg.de/ kulturbehoerde/4374978/kulturpunkte/ (retrieved on: 18.05.2017).
- Optigrün (n. y.) 'Diese Städte fördern Dachbegrünung' URL: http://www. dachbegruenung-ratgeber.de/startseite/ gruendachfoerderung (retrieved on: 18.05.2017).
- Partner für Spandau Gesellschaft für Bezirks-Marketing mbH (o.J.): Altstadt Spandau. URL: http://www.partner-fuer-spandau.de/ Altstadt-Spandau 76 0.html (retrieved on: 15.05.2017).
- Senatsverwaltung für Umwelt, Verkehr und Klimaschutz (o. J.) 'Stadtbäume für Berlin – Kampagne – SPENDEN'/ URL:http:// www.stadtentwicklung.berlin.de/umwelt/ stadtgruen/stadtbaeume/kampagne/de/ spenden/ (retrieved on: 17.05.2017).
- Senatsverwaltung für Stadtentwicklung und Wohnen Berlin (n. v.): Bevölkerungsprognose 2015- 2030 Berlin und Bezirke. URL: http://www. stadtentwicklung.berlin.de/planen/bevoelke rungsprognose/de/prognose berlin/bezirke. shtml (retrieved on: 26.02.2017).
- Senatsverwaltung für Stadtentwicklung und Wohnen (2016): Flächennutzungsplan Planzeichnung 2016. URL: http://www. stadtentwicklung.berlin.de/planen/fnp/de/ fnp/ (retrieved on: 17.05.2017).
- Spandau-tourist-info.de (n. y.) 'Entdeckungen rund um die St.-Nikolai-Kirche'
 - URL: http://www.spandau-tourist-info.de/ reformationsplatz-rundgang/ (retrieved on: 18.05.2017).
- Stadt Bruchsal (2015) 'Mehr Grün für Bruchsal - Anregungen und Tipps für eine Begrünung Gebäude. URL: https://www.google. am de/Mehr Gruen fuer Bruchsal 2015 (retrieved on: 18.05.2017).
- Universitätsstadt Tübingen: 'Stadtrundgänge' http://www.tuebingen.de/19. html#/18957 (retrieved on: 18.05.2017).

Wabe 'Quartiersentwicklung (n. y.) URL: (Biwaq)' http://www.wabembh. de/%C3%B6rderinstrumente /biwaq angebote.html (retrieved on: 18.05.2017).