1|2022

RESEARCH NEWS

BBSR

Dear Readers,

The effects of climate change are already being felt. Days of extreme heat are occurring more frequently. There will be more frequent, heavy local rainfall. This will have a particularly strong impact on densely built-up cities. Many communities are unprepared for this. We need to remodel our cities to improve their ability to cope with the consequences of extreme weather.

What our cities need is more well-connected green and open spaces to reduce the impact of heavy rain and to cool down the environment in summer. The necessary remodelling of cities is cost-intensive and time-consuming. A strong political will is therefore needed to tackle this transformation, which will also enhance the quality of life in the cities.

In addition to climate change mitigation, the federal government also supports municipalities in adapting to the impact of climate change – for example, working with the federal states in the promotion of urban development. Moreover, it has launched the programme "Adapting urban spaces to climate change". The programme promotes exemplary projects that preserve and develop the vitality and functional diversity of publicly accessible green and open spaces such as parks and gardens. The BBSR is implementing the programme for the Federal Ministry of Housing, Urban Development and Building. Further information can be found at www.bbsr.bund.de/klima-raeume (in German).

I hope you will find this interesting.

Markus Eltges

Dr Markus Eltges
Director of the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR)

Nationwide building land survey: Almost 100,000 hectares of building land for two million residential flats

by Dr. Fabian Dosch

From left to right: Prof. Dr. Eckart Würzner, First Deputy President of the Association of German Cities and Lord Mayor of Heidelberg, Federal Minister for Housing, Urban Development and Building Klara Geywitz and Dr. Markus Eltges, Head of BBSR Source: Henning Schacht

One of the core challenges of our time is to build sufficient affordable housing: 400,000 new residential flats every year, 100,000 of these in publicly funded housing.

It remained unclear for a long time whether there are enough building land reserves in Germany. A new study by the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR), which was commissioned by the Federal Ministry for Housing, Urban Development and Building (BMWSB) shows that there is sufficient building land available.

The Federal Minister for Housing, Urban Development and Building Klara Geywitz, Prof. Dr. Eckart Würzner, First Deputy President of the Association of German Cities and Mayor of Heidelberg, and Dr. Markus Eltges, Director of the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR), presented the results of the study at the Federal Press Conference on 29 March 2022:

- The study estimates the potential building land ready for development in towns and municipalities at a figure of at least 99,000 hectares.
- Two thirds of this land are envisaged for housing by the municipal planning departments.
- Between 900,000 and approximately two million residential flats can be realised on this land; with denser

building concentration, this figure could even rise up to four million.

- There is substantial land potential for the accommodation of housing in both metropolitan and rural regions.

- An increasing number of municipalities are systematically keeping records of their potential building land such as brownfield sites and individual vacant plots of land , which forms an important database for municipal building land policy.

"Germany has sufficient building land, equal to the size of Berlin or 140,000 football fields," says Klara Geywitz, Federal Minister for Housing, Urban Development and Building. "This is the potential we need to build 400,000 new residential flats every year, 100,000 of these as subsidised housing. It would be possible to build on this more than half of this land at short notice. In order to avoid the impervious sealing of land and urban sprawl, inner-city development and the careful use of brownfield sites and individual plots of land is important. Land for building is available. The focus now needs to be on the common willingness to quickly provide the housing market with as much affordable housing as possible. We will be starting off on this mission at the federal level on April 27 with the Alliance for Affordable Housing" says Geywitz.

Prof. Dr. Eckart Würzner: "The creation of affordable housing is one of our most urgent challenges at present. The building land survey shows that there is no need to use the green area outside the cities for building, as there is sufficient land potential for housing within the city areas. Combined efforts are necessary to enable the available land to be used for building housing, schools, children's day-care centres and other facilities. What we need is consistent and permanent funding by the federal government and the federal states for subsidised housing. Suitable areas of land must be mobilised at short notice, and the entire building legislation needs to be streamlined. Cities must be enabled to buy land at a low price and develop it for the common good. Building areas available for immediate use must not simply be left to lie dormant for speculation purposes."

Dr Markus Eltges of BBSR: "With clever building land concepts and awards, municipalities can make sure that areas available for building are not only used for the construction of highly priced housing, but also for affordable housing. The realisation of housing projects in one's own back yard cannot be taken for granted. It is vital to involve the population in the planning processes from an early stage. This builds trust, increases acceptance and increases the quality of the building."

Cover of the BBSR online publication on the results of the building land survey
Source: BBSR, Photo: R. Vigh, IÖR-Media

The Leibniz-Institut für Ökologische Raumentwicklung IÖR (Leibniz Institute of Ecological Urban and Regional Development IOER) and the Institut der deutschen Wirtschaft IW (German Economic Institute) were commissioned with the study. The researchers interviewed almost 3,000 cities and municipalities of all sizes throughout Germany. Based on the feedback of almost 700 municipalities, the researchers calculated the areas available as building land throughout the country while differentiating between regions, established the housing units that could be realised there and estimated how the housing requirements might be realised on the land available.

To view the results, please refer to the (German-speaking) website: www.bbsr.bund.de/baulandumfrage.

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Establishing authorities in structurally weak areas

by Andrea Hankel

A study published by the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR) shows on the basis of four case studies, how the establishment of authorities in structurally weak areas can succeed. For this, the ifo Institute conducted online surveys and interviews with employees and interviews with representatives of politics and economy.

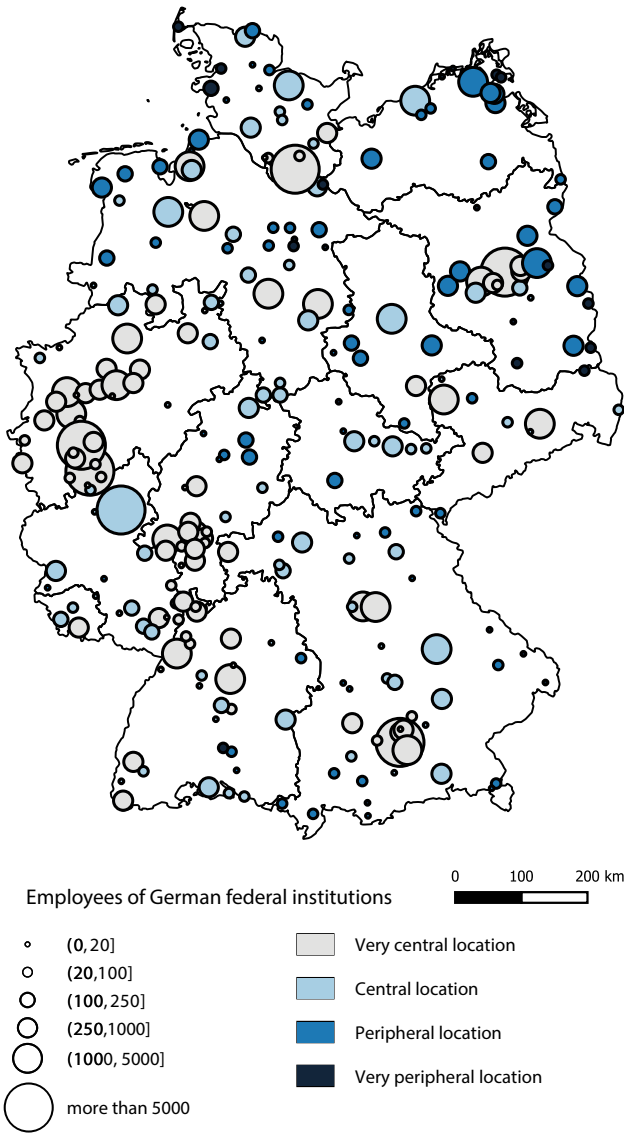
The researchers discovered that authorities with less specialised tasks generally recruit employees faster and more extensively than facilities requiring highly qualified employees and specialists. In addition, the qualification profile for the new jobs should match the regional employment market well.

According to the study, attractive work and location conditions are important factors in providing incentives for employees and their families to move to a new location. This includes employment opportunities for the partners, permanent employment contracts and a good infrastructure, as well as good education facilities, a fast internet connection, diverse recreational activities and suitable housing options. The survey also mirrors the desire of the employees to feel welcome at their new location.

The new locations for the authorities were a chance for some employees to find work in their home region, or to find a new home in Germany's rural areas. The research work also shows, however, that many of the employees working for the authorities lived in nearby large cities or commuted from the former locations. Additional economic impulses in the target regions are predominantly to be expected when employees and their families move to the new location together. The researchers recommend that the structure-enhancing effects of new locations of authorities be more deeply examined.

The case examples on which the studies are based are the Amt für Ländliche Entwicklung ALE (Office for Rural Development) of Upper Palatinate in Tirschenreuth, the ALE of Upper Bavaria, which will in future be located in Mühldorf am Inn, the external branch office of the Bundesamt für Wirtschaft und Ausfuhrkontrolle BAFA (Federal Office of Economics and Export Contro) in Weißwasser and the Umweltbundesamt UBA (Federal Environment Agency) in Dessau-Roßlau.

Distribution of employees in federal institutions by geographical location



Note: Illustration of the ifo Institute.
Source: Federal Government - Printed Paper 19/18600 (2020).
Digital geodata: Federal Agency for Cartography and Geodesy (2021): Administrative areas 1:25,000 (layers), as of 01.01.2021

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BBSR joins the Lusatia Science Park network

by Dr. Anika Noack and Dr. Andreas Otto

The Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR) is involved in establishing the Lusatia Science Park.

On 7 March 2022, the head of BBSR, Dr Markus Eltges, signed a letter of intent in a ceremony at Brandenburg University of Technology Cottbus-Senftenberg (BTU) and together with other representatives of renowned research institutions, of the federal state of Brandenburg, the municipalities of Cottbus and Senftenberg as well as business leaders. Under the leadership of BTU, an innovation landscape with international appeal will be created at the Cottbus site in the coming years. In addition to developing a strong ecosystem of innovation, the Lusatia Science Park aims to support the region's transformation into a model of climate neutrality.

In his speech, Minister-President of Brandenburg Dietmar Woidke described Lusatia Science Park (LSP) as one of the major pillars of the structural development of Lusatia. Manja Schüle, Minister for Science, Research and Culture of the federal state of Brandenburg, added that the Science Park was the starting point for a new Lusatia-Berlin axis of innovation. The President of the BTU and initiator of LSP, Gesine Grande, stressed that due to its dynamism, Lusatia is already the "place to be".

The BBSR has recently established a new site in Cottbus. This is where the Competence Centre for Regional Development is being set up to benefit the lignite mining areas in Germany affected by the coal phase-out. Lusatia is one of those areas. Through their scientific expertise, the employees of the Competence Centre will actively support these regions in shaping the transformation process towards better climate protection and a sustainable economic structure. The focus is on creating positive future prospects for local people.

The BBSR sees its added value in being a member of LSP in its ability to rapidly network with a large number of important regional actors, initiating cooperation in the research sector and expanding knowledge transfer. As a key measure of structural change in the Lusatian mining area, the development of LSP and the process of locating new and thus hoped-for research entities are of particular interest to the Competence Centre. In addition, it enables the take-up of the latest research results from the energy transition and decarbonisation clusters as well as from global change and transformation processes. The Competence Centre is able to reflect on social and spatial consequences, to test developments in the context of model projects and to analyse and prepare results as a basis for information for specific regions and municipalities in Germany. Suitable formats help to support mutual learning. This is also reflected in the "research through funding" approach.

Dr Markus Eltges, Director of the BBSR, announcing the Competence Centre for Regional Development in Cottbus, Germany. Source: BBSR/Andreas Otto

The task of the BBSR in Cottbus is to support and network with all regions affected by the phase-out of lignite coal through research and advice in shaping an exemplary transformation process. LSP marks the beginning of this activity within the Lusatian mining area. There are also close cooperative relations between the BBSR and RWTH Aachen University in the Rhenish mining area. This will be followed by more personal and thematic networking activities of the responsible actors in the lignite regions.

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Klara Geywitz, Federal Minister for Housing, Urban Development and Building opens BBSR Competence Centre for Regional Development in Cottbus

by Christian Schlag

The Competence Centre for Regional Development of the Federal Institute for Research on Building, Urban Affairs and Spatial Development officially commenced its activities on 23 May 2022. The Federal Minister for Housing, Urban Development and Building Klara Geywitz opened the new location at an official ceremony attended by representatives of the federal government, the federal states and regions affected by the phasing out of coal, the city of Cottbus and academia.

The objective of the new institution is to support the structural change in Lusatia, Central Germany and the Rhineland area with its academic expertise and to support cities and municipalities in the development of future prospects. By the end of 2023, 55 jobs will be generated at the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR). This will create highly attractive employment opportunities in this region with future prospects in the federal civil service.

Among other topics, the experts at the Competence Centre for Regional Development conduct research on such questions as how structural change can be supported and developed in a socially compatible way, how new partnerships can be established to exploit the opportunities of the energy transition and digitalisation in order to achieve a successful transformation. The results of this research will also be transferable to other regions in Germany affected by structural change.

Klara Geywitz, Federal Minister for Housing, Urban Development and Building: "We are bringing the know-how from our nationwide departmental research into the regions, where the BBSR is assuming central interface and mediating functions, ranging from the federal government over the regions to the municipalities. Our research aims to answer the following questions: How are the regions doing? How are the people there?

Klara Geywitz, Federal Minister for Housing, Urban Development and Building, in conversation with the President of the Federal Office for Building and Regional Planning, Petra Wesseler (left), and the Director of the Federal Institute for Research on Building, Urban Affairs and Spatial Development, Dr Markus Eltges (right)

Source: BMWSB/Stefanie Loos

Panel discussion "The Competence Centre Regional Development as a new building block of the science location" as part of the opening event

Source: BMWSB/Stefanie Loos

What do they need to find work and good living conditions, and most importantly, to enable them to shape their own lives? Among others, the task for our new Centre of Competence for Regional Development will be gaining knowledge of all these factors and bringing the right parties together."

Dr Markus Eltges, Head of the BBSR: "Although the BBSR is a newcomer in Cottbus, it is already extensively supporting the lignite mining regions in Germany. Together with the Federal Ministry of Housing, Urban Development and Building, we are supporting the districts, for example, in various programmes aiming to strengthen town and city centres, adapt urban areas to climate change and in creating smart cities and smart regions. This will be the basis on which we intend to develop these projects together with the regional players."

For the BBSR, networking with parties from the academic community in the districts is just as self-evident as the cooperation with all participants actively involved in shaping the transformation process – in administrative facilities, the economy and civil society.

The establishment of the Competence Centre is based on the Structural Development Act of the federal government. Meanwhile, in the coal regions, the federal government has filled more than 2,700 new positions in federal authorities and institutions, which means that more than half of the 5,000 jobs envisaged as the structural policy target by 2028 have already been achieved. This is shown in an analysis by the Competence Centre for Regional Development, available on the BBSR website.

The BBSR, with its current workforce of about 250, is a departmental research institution under the management of the Federal Ministry of Housing, Urban Development and Building (BMWSB). It supports the BMWSB with scientific policy advice regarding tasks related to housing, property and construction as well as urban and spatial development. Since 2009, the BBSR has also drawn up, implemented and managed promotional and investment programmes in cooperation with the municipalities. The BBSR is located in Bonn (headquarters), Berlin and Cottbus.

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Interreg B: a wide range of funding opportunities for local and regional actors

by Brigitte Ahlke

As part of its cohesion policy, the European Union will continue to support transnational cooperation (Interreg B) in the 2021-2027 programming period. The Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR) supports transnational cooperation in a variety of ways: it represents the German Federal Government in the national and transnational committees managing the six Interreg B programmes with German participation. In addition, it informs the professional public, promotes the transfer of results and organises the exchange of information and experience across Germany. The BBSR also supports projects of special interest to the Federal Government on behalf of the Federal Ministry for Housing, Urban Development and Building (BMWSB), within the framework of the Federal Transnational Cooperation Programme.

Extended participation opportunities for German regions

Germany will continue to participate in the transnational programme areas: Alpine Space, Danube Region, Central Europe, North Sea Region, North-West Europe and Baltic Sea Region. For some German regions, changes in the programme area definitions have resulted in expanded participation opportunities – especially for regions in the federal states of Bremen, Lower Saxony, Baden-Württemberg and Bavaria. Bremen and the Lower Saxony regions of Weser-Ems and Leine-Weser are now part of the North-West Europe cooperation area. With the Braunschweig region, Lower Saxony will also be involved in the Central Europe Programme. The Alpine Space Programme now covers all regions of Bavaria and Baden-Württemberg, so that the programme geography was aligned with that of the macro-regional EU Strategy for the Alpine Region (EUSALP).

New programme period launched – first calls for project proposals

The Alpine Space Programme and the Central Europe Programme have already been approved; the other four Interreg B programmes have been submitted to the European Commission for approval. In mid-November 2021, the first calls for project proposals for the new funding period in the Central Europe and Alpine Space Programmes were launched. The North Sea Region Programme opened the first call in mid-December followed by the Baltic Sea Region and North-West Europe Programmes in the first quarter of 2022. In the Danube Transnational Programme, the first call for project proposals will be opened in September 2022. The first calls show that there is a high demand for transnational cooperation. In the Central Europe Programme alone, 280 applications were received from transnational project consortia.

Focus on topics that address local and regional needs

The topics that can be addressed in the projects are diverse. The Interreg B programmes each focus on a limited number of funding themes related to the policy objectives of the EU cohesion policy for a smarter, greener, more social and better connected Europe. Cooperation for better governance is also an important goal of cooperation. In the current funding period 2021-2027 and building on the Territorial Agenda 2030, the key document on spatial development in Europe, there will be a stronger focus placed on spatial issues that address local and regional needs. How can climate adaptation measures be implemented sustainably in cities and regions? What opportunities does the circular economy present if it is based on local and regional strategies, plans and approaches? How can sustainable mobility be created and the physical infrastructure for digital connectivity be provided for all? These are just some of the issues addressed in the programmes. This brings the approach of integrated territorial development back into the focus of transnational cooperation. It aims to meet spatial challenges through interdisciplinary cooperation. Involvement at the local and regional levels is a key factor for successful project implementation. At the same time, local, regional and specialist authorities are coming more into focus as potential applicants.

National kick-off conference

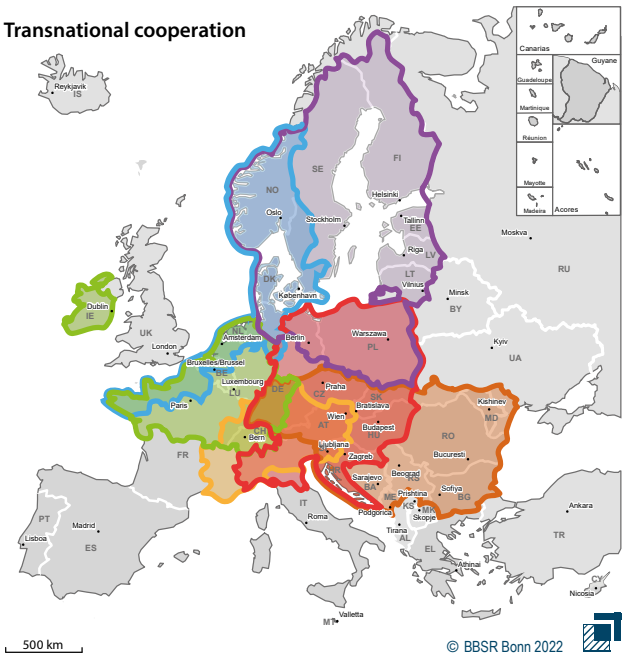
On the occasion of the start of the programming period, the BMWSB sent out invitations to the conference "Transnationale Zusammenarbeit by Städten und Regionen:

Interreg B 2021 – 2027" (Transnational cooperation of cities and regions: Interreg B 2021–2027), held in Berlin on 12 and 13 May 2022. More than 200 representatives of the Federal Government, the federal states, cities and municipalities as well as from the industrial sector came together to obtain a political, technical and practical overview of relevant questions concerning the six Interreg B cooperation areas with German participation. In her keynote speech, Federal Building Minister Klara Geywitz emphasised the importance of transnational cooperation for cohesion in Europe: Especially in these difficult times for Europe, developing joint solutions for trans-border challenges is more important than ever.

Just published: five thematic booklets

With the start of the funding period, the BBSR has published five thematic booklets on the main topics of transnational cooperation. The booklets show the advantages of a transnational approach for cities and regions in meeting their challenges with Interreg B. The publications provide concise information on such questions as: What is the political relevance of the respective topic in Germany and the EU? Which are the thematic funding priorities of the various programme areas in the respective thematic area? What examples of good Interreg B projects already exist and what is the secret of their success? The following (German-language) booklets have been published:

- Innovation und Digitalisierung in Stadt und Region mit Interreg B (Innovation and digitalisation in cities and regions with Interreg B)
- Klima- und Ressourcenschutz in Stadt und Region mit Interreg B (Climate and resource protection in cities and regions with Interreg B)
- Soziale Teilhabe und Gemeinwohl in Stadt und Region mit Interreg B (Social participation and public welfare in cities and regions with Interreg B)
- Nachhaltige Mobilität in Stadt und Region mit Interreg B (Sustainable mobility in cities and regions with Interreg B)



- Integrierte Stadt- und Regionalentwicklung mit Interreg B (Integrated urban and regional development with Interreg B)

The booklets can be ordered free of charge at beatrix.thul@bbr.bund.de and are available for download.

New Interreg programmes, new Interreg website

Parallel to the first calls for project proposals, we have relaunched the BMWSB and BBSR website on transnational cooperation in Europe. On the website www.interreg.de you will continue to find all the basic information (in German) about the Interreg B programmes with German participation and the Federal Transnational Cooperation Programme. There is also a reduced offer published in English.

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BBSR supports municipalities in developing town and city centres

by Verena Lihs, Iris Fryczewski and Julia Siedle

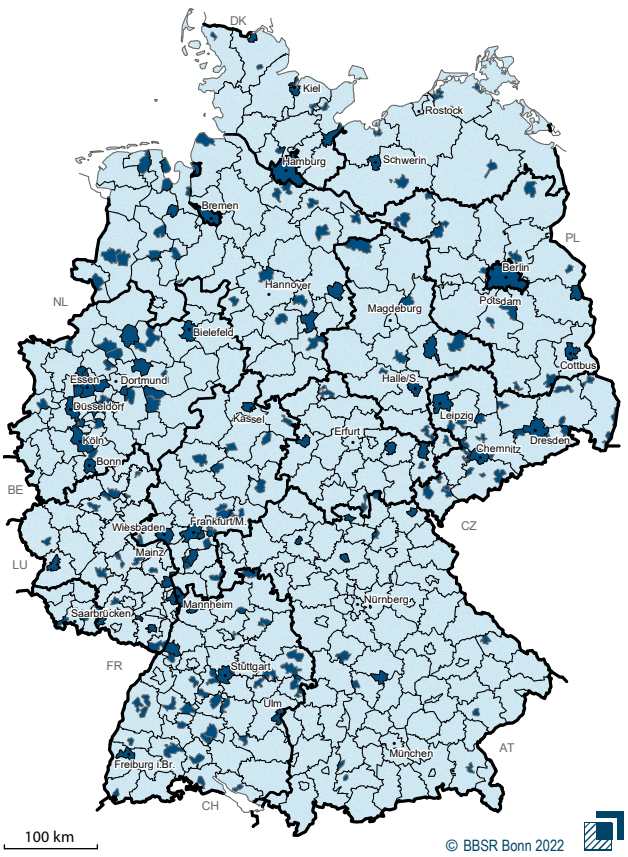
The BBSR has been commissioned with the implementation and expert supervision of the federal programme "Sustainable Town and City Centres". In this role, it will help municipalities cope with the profound challenges of developing their central districts. Such challenges include the structural shift from bricks-and-mortar retail to online trade, combined with the closure of (owner-operated) retail shops and larger department stores. Another key challenge is the strain on the cultural and catering sector caused by the COVID-19 pandemic. These changes mean that resilient town and city centres will have to move away from single-use districts which are predominantly oriented towards the retail trade.

For the German Federal Ministry for Housing, Urban Development and Building (BMWSB), the development of town and city centres is a key part of its future activities. The German Federal Government is providing 250 million euros of funding to help municipalities break new ground by 2025 and seize opportunities to revitalise central districts and town and city centres. The objectives of the programme include establishing a diverse mix of uses, generating integrated action strategies from cooperation between public authorities and other stakeholders and initiating small-scale forms of participation and supporting openness to experimental spaces.

Following the call for projects in mid-2021, interested municipalities submitted draft proposals of their planned projects. These municipalities represent all regions of Germany and range from small towns and rural municipalities to medium-sized and large cities. Of the municipalities, 8.5% are located in the target regions of the Strukturstärkungsgesetz (act supporting economy and employment in the regions affected by the coal phase-out), which supports regions affected by the coal phase-out. The proposals also cover a broad range of topics, from generating strategies and expert opinions to establishing and strengthening stakeholder cooperation, and from urban development funds in city centres to creating new mixes of uses, for example, by concentrating small businesses or co-working spaces in vacant retail spaces. In addition, some municipalities intend to strengthen their centres through structural measures and extensive public relations work.

The projects selected for funding are due to start in the coming months with implementation of their measures by 2025. Cooperation with various partners plays an important role in the projects. In many cases, the actors involved include municipal subsidiaries, local trade associations, property owners and civil society, who must be involved through the use of targeted participation formats. In the coming years, the participating municipalities will also share knowledge and experience with one another and communicate successful solutions to specialists in relevant fields.

Federal programme "Sustainable Town and City Centres"



Municipalities of the federal programme "Sustainable Town and City Centres" earmarked for funding

municipalities selected for funding

Database: Spatial Monitoring System of the BBSR
Geometrical basis: counties (Kreise) (generalised) 31/12/2019 © Geo-Basis DE/BKG
Author: M. Haake

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Nationwide recording: How green are German cities?

by Dr. Fabian Dosch

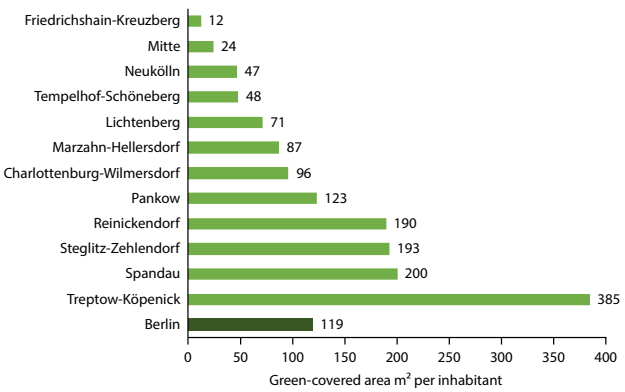
Both the Green Spaces in the City white paper 2017 and the New Leipzig Charter 2020 of the Federal Government's urban development policy aim to strengthen urban green infrastructure. Urban green spaces make the living environment liveable, provide recreational and exercise spaces, improve the urban climate and ensure biodiversity. However, official statistics do not yet record the extent of greening in German cities.

The Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR) commissioned a research consortium to create a nationwide comparable, small-scale database on various indicators of urban green spaces based on satellite data from Copernicus, the European Union's earth observation and monitoring programme. The urban green spaces were comprehensively classified into three categories: hardwood, softwood and low vegetation. Using survey points from the Land Use and Coverage Area frame Survey (LUCAS) of the EU statistical authority Eurostat, a machine learning algorithm (Random Forest, AI) was used to record the land cover with an overall accuracy of over 90%.

The resulting digital map product Urban Green Space Grid for Germany provides a high-resolution visual impression of the extent of urban green spaces. This enables comparisons of the green space within and between cities to be made based on the population, the formulation of goals for the future green infrastructure and to identify spatial focal points with a lack of green infrastructure. In addition, the grid forms the basis for the quantitative description and subsequent monitoring of urban green spaces.

Using data based on the grid and in coordination with the BBSR, the researchers, were able, among other things, to calculate the proportion of green spaces in the urban area, as well as the supply, connectivity and accessibility of green areas within the residential environment. The indicators thus enable small-scale comparisons. Analyses showed that differences are particularly determined by the size of the city and its urban structure. For example, the population-related green space in the districts of Berlin varies by a factor of 20 between the inner and outer districts. The proportion of green space in a city is essentially inversely proportional to the degree of soil sealing.

Districts of Berlin



Source: IÖR on behalf of the BBSR 2022

Results from eight case studies show how cities and municipalities can use the high-resolution satellite-driven data as amended by aerial photos or laserscan data for further analysis on the green infrastructure, open space and settlement development. Remote sensing assists the presentation and discussion of such topics as the volume and vitality of green space (drought stress of plants), the relationship of green infrastructure to social spaces or deficits in green infrastructure. The project results present arguments for setting up a municipal green monitoring scheme and provide the German Federal Government and the state governments with regionally differentiated data and indicators on the development of urban green spaces.

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www.bbsr.bund.de > Forschung > Programme > Allgemeine Ressortforschung > Grünmonitoring

www.ioer-monitor.de

BBSR-Online-Publikation 03/2022 "Wie grün sind deutsche Städte?" (How Green are German Cities?)

Individual Publication "Wie grün sind deutsche Städte?" (How Green are German Cities?)

Online retail purchasing power is particularly high in economically strong cities and their outskirts

Source: Rido – stock.adobe.com

Online shopping: Southern Germans are biggest spenders

by Dr. Andrea Jonas

In 2020, people in the counties of Starnberg, Munich, the Hochtaunuskreis and the city of Munich spent the most money on online purchases, averaging about 1,000 euros. At the bottom of the scale are the cities of Herne and Pirmasens with an average of less than 650 euros per person. The average expenditure throughout Germany amounted to roughly 800 euros per inhabitant. This is illustrated in an analysis performed by the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR). In the regional analysis, the BBSR assessed data from the Gesellschaft für Konsumforschung (Consumer Research Association) for a total of 17 categories of products, such as clothing, food, DIY and furnishings, amongst others. The results of the analysis are featured in the current edition of the series BBSR-Analysen KOMPAKT.

The online retail purchasing power was particularly high in economically strong cities and their outskirts. However, the figures in structurally weak cities and counties are low in comparison. “In places where people earn a higher income, they also spend more money on online shopping,” says Andrea Jonas, the author of the study. “The contrasts between structurally strong and structurally weak areas are striking."

Regional differences also emerge in terms of the variety of goods. Inhabitants spent an average of approximately 100 euros each on online purchases of clothing. The counties with the highest figures included Munich, Starnberg and the Hochtaunuskreis. The lowest figures were recorded in the cities of Kaiserslautern, Pirmasens and Herne.

On the other hand, people in cities spent more than average on food products on the internet. The relevant online purchasing power in the city of Munich is the highest throughout Germany at about 60 euros per inhabitant, followed by the cities of Frankfurt am Main, Regensburg, Berlin and Hamburg at around 50 euros per inhabitant.

Online consumption in the DIY range of products is distributed regionally slightly differently than in the other product categories: People from rural areas tend to have a higher online purchasing power, particularly in Bavaria and in several eastern German regions.

Interested persons can view the study “Spatial patterns of Online Shopping in Germany” (in German) on the BBSR website.

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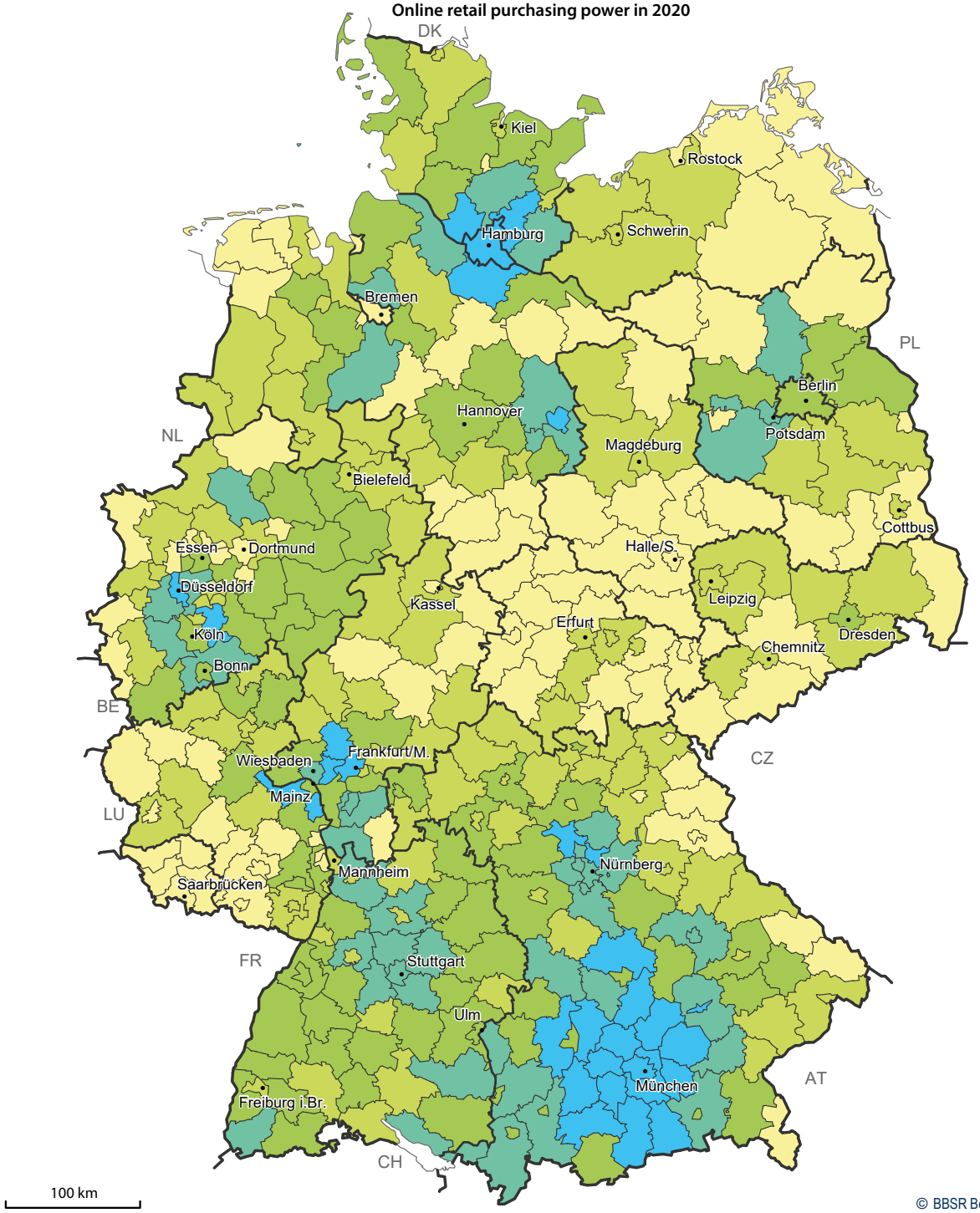
BBSR-Analysen KOMPAKT 19/2021

Online retail purchasing power in 2020



Online retail purchasing power per inhabitant in 2020 in euros

- Under 750
- 750 to under 800
- 800 to under 850
- 850 to under 900
- 900 and over

Source of data: Continuous spatial monitoring of the BBSR; GfK online product purchasing power
Geometric basis: Counties (generalised), 31/12/2019
© GeoBasisDE/BKG
Editing: A. Jonas

#connectedinEurope: Empowering smart cities – approaches to action for European networking

by Orhan Güleş

Together with the German Federal Ministry for Housing, Urban Development and Building (BMWSB), the BBSR has developed a practically oriented project for networking German and European smart cities. The project "#connectedinEurope" is part of the BBSR's activities in the Smart Cities research cluster with a focus on the topic of "Smart Cities International". Framework programmes at the European level are the European Green Deal and Digital Europe. Both programmes play a central role in the implementation of the European Union's climate protection and digitalisation goals.

An important approach to implementing the programme goals is the (further) development of European municipalities into smart cities in terms of sustainable, integrated urban development for the common good. In order to successfully achieve this goal, communication between institutional stakeholders and municipalities at European level is necessary.

The project started in June 2021. It aims at getting European municipalities involved in European networks and in projects on digital transformation. Particularly small and medium-sized municipalities are activated and supported in a targeted and structured way. So far, they are underrepresented in initiatives – despite having deficiencies with regard to the development of their digital competences and strategies.

There are many examples where the extensive experience of large cities may benefit other municipalities. At the same time, results from research and practically oriented projects at the BBSR demonstrate the benefit of approaches focused on transnational and European cooperation and networking. Intensifying intercommunication not only contributes to the transfer of knowledge of innovation and best practice of digital urban development in the European context, but also promotes resilient partnerships and expert-centred dialogues on approaches based on transferable projects.

The #connectedinEurope project complements the structures of European digitalisation and smart-city initiatives and programmes in the current EU funding period (2021-2027). Under the project leadership of the Smart City team at the BBSR, the project analyses current EU digital programmes and regulations as well as the participation of municipalities in European networks, projects and initiatives. In addition to the kick-off conference in February 2022, the project is currently planning and implementing follow-up exchange formats and projects for 2022. These include:

Smart City Mindmap Source: littlestocker – stock.adobe.com

- networking workshops with the ministries responsible for urban development and digitalisation in the EU member states as well as institutional stakeholders at EU level;
- launching and implementing peer learning projects of German and European municipalities in the thematic field of "digitalisation, smart city and urban development" (including case studies and accompanying research);
- organising expert and networking workshops with European municipalities on specific topics.

The project team will continue the exchange and networking formats and the peer learning projects until the end of the project in 2024. Interim results and experience from individual project activities will include digital tools for municipal practice. In this way, the project team provides municipalities with practical support to build up and consolidate networking activities. At the same time, the project is developing national and European networks on digitalisation and urban development to further strengthen the cooperation of established networks and initiatives.

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Online Forum "Integrated Approaches to Dissonant Heritage in Europe: Insights, Networks and Future Perspectives"

by Birgit Kann and Jan Schultheiß (BMWSB)

Former Monument House of the Bulgarian Communist Party – Buzludzha, Kazanlak, Bulgaria Source: Dora Ivanova

The Experimental Housing and Urban Development (ExWoSt) research project "Integrated Approaches to Dissonant Heritage in Europe" provided the framework for the Online Forum. The digital event on 16 and 17 February 2022 brought together around 200 international experts, researchers and practitioners from more than 20 countries.

In many places in Europe, dissonant heritage is neglected, not accessible to the public or threatened by demolition and decay. This includes, for example, sites and architectural evidence of war, persecution, colonisation and propaganda as well as industrial structures or places of environmental degradation. Dealing with this heritage is a particular challenge. It often is politically and/or ethically charged and evokes negative memories and associations for society or for particular social groups. At the same time, dissonant heritage sites have the potential of becoming places of remembrance, cultural identity and democracy building and thus can be relevant drivers for sustainable and inclusive urban development.

The Online Forum aimed to raise awareness of European networks, initiatives and associations working on the topic of dissonant heritage. A broad variety of presentations and discussions provided opportunities for networking and exchanging ideas on how to deal with dissonant heritage in Europe at different levels and disciplines and in various fields of action – for instance at an online marketplace, at which various projects presented themselves. In addition, participants discussed the interim results of the research project that had been summarized in an orientation paper. The paper as well as the workshop documentation will be provided on the project website of the BBSR.

The Online Forum was organised at the invitation of the Federal Ministry for Housing, Urban Development and Building (BMWSB) and the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR) as part of the Partnership on Culture/Cultural Heritage of the Urban Agenda for the EU. The Partnership aims to support cities and regions in dealing with their cultural heritage. Eleven actions develop recommendations for better regulation, funding and knowledge exchange in the EU. Action 10 examines how integrated approaches can strengthen and in the long term harness the potential of dissonant heritage sites for society, tourism as well as urban and regional development. The action focuses on 20th-century heritage sites in smaller towns and peripheral locations. A group of European experts implements the action jointly, and the ExWoSt research project supports and accompanies these activities.

The results of the research project will be published in a "toolkit" as a practical guide on integrated approaches to dissonant heritage for the relevant target groups at the local level.

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Further increase in quoted rents

by Alexander Schürt

Rents for the re-letting of advertised housing in existing buildings rose nationwide by 3.5% to an average of €9.29 per m² in 2021.

Rental price dynamics in the major German cities have slackened off significantly. This has been revealed by an study by the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR).

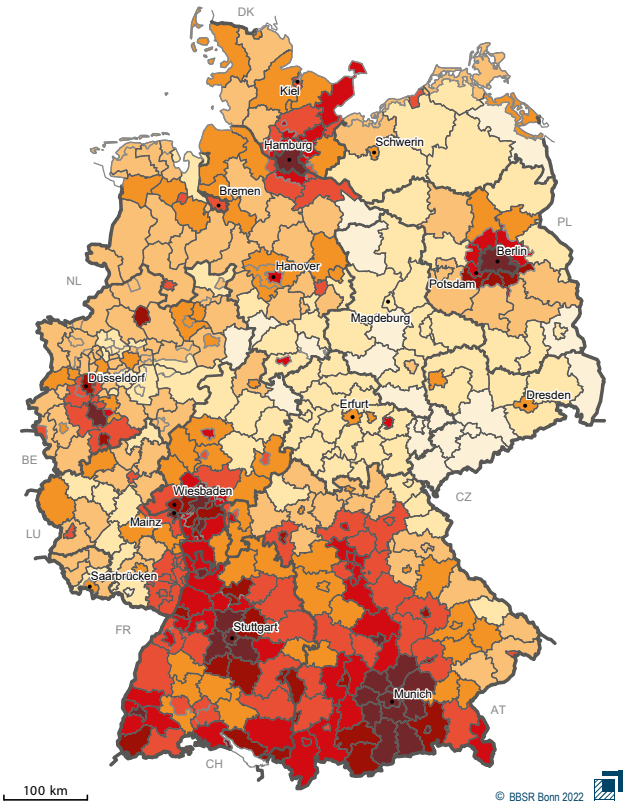
There is still a large gap between expensive and affordable regions: Munich tops the list of autonomous cities and counties with the highest re-letting rents (€18.92 per m²), followed by the counties of Munich (€15.60 per m²), Starnberg (€14.20 per m²) and Fürstenfeldbruck (€14.16 per m²), followed in turn by the cities of Stuttgart (€14.33 per m²) and Frankfurt am Main (€14.01 per m²). At the bottom of the list are the counties of Vogtlandkreis (€4.81 per m²), Greiz (€4.99 per m²) and Görlitz (€5.08 per m²).

In 2021, the re-letting rents in the autonomous large cities averaged €10.63 per m². In the metropolitan areas of Munich, Stuttgart, Hamburg, along the River Rhine in North Rhine-Westphalia and in the Rhine-Main region, high rents in the core cities spread deep into the surrounding areas. Rents are also exceptionally high in the attractive tourist regions bordering the Alps and in the Lake Constance area. In contrast, tenants in peripheral counties pay an average rent of less than €7 per m².

While quoted rents for re-let housing stagnated in Munich, Stuttgart and Düsseldorf and even fell by 3% in Frankfurt am Main, Hamburg registered a plus of 3% following just under 5% in 2020. "Considerably fewer people have moved to the largest cities over the last two years because of the pandemic", says the BBSR's housing market expert, Alexander Schürt. "The lower inbound migration has reduced the demand for rented housing. Furthermore, the largest cities have considerably expanded their provision of housing over the last ten years. Consequentially, supply and demand are in a more favourable relationship."

As opposed to quoted rents, for several years rents for existing tenancies have consistently risen only slightly. According to the consumer price index published by the German Federal Statistical Office, existing net "cold" rents, (i.e. without ancillary services), rose over the past four years by an average of only 1.4%, thus remaining just below the general level of inflation. In the autonomous large cities, net cold rents have risen over the last four years by an average of 1.5%, compared to 1.3% in sparsely populated rural counties.

Rents for the re-letting of advertised housing 2021



Quoted rents of re-let housing in mid-level/good residential locations 2021 in € per m² without services

up to 5.50	8.50 up to 9.50
5.50 up to 6.50	9.50 up to 10.50
6.50 up to 7.50	10.50 up to 11.50
7.50 up to 8.50	11.50 and over
counties	sub-counties

Comments: Quoted rents without ancillary costs for unfurnished housing in existing buildings (without new buildings) with a living space of 40 to 100m², with medium-standa rd facilities in mid-level to good residential locations, originating from housing advertisements published on real estate platforms on the Internet and in newspapers

Source of data: BBSR-Wohnungsmarktbeobachtung (Housing Market Monitoring Initiative), IDN ImmoDaten GmbH , microm residential locations
Geometricbas is: Counties (generalised), 31/12/2019 © GeoBasis-DE/BKG
Processing: N. Brack, J. Nielsen, A. Schürt

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The Zukunft Bau Pop-Up Campus – a temporary platform for experimental construction

by Dr. Arnd Rose

This year, Zukunft Bau is for the first time testing a new format that builds a bridge between the latest scientific findings, their translation into practical construction applications and communication to a broad public. For a period of three months in summer/autumn 2022, an existing area will be transformed into an experimental space that enables the creative and unbureaucratic testing of new structural approaches: the Zukunft Bau Pop-Up Campus.

The Zukunft Bau Pop-Up Campus is a joint project initiated by the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR) supported by the Federal Ministry for Housing, Urban Development and Building (BMWSB), backed by a nationwide university network and organised this year by the Faculty of Architecture of RWTH Aachen University together with the City of Aachen. In the centre of the city, within walking distance of the main train station, the Aachener Bausparkasse bank building, which has been vacant since the end of 2021, will be converted for this purpose.

With a focus on the goal to achieve a climate-neutral building stock in 2045, it will generate and demonstrate innovative approaches for the construction of the future. The main task of the Zukunft Bau Pop-Up Campus is to identify solutions for a better use of resources in the construction industry. Under the slogan "Save Material – Save the Planet", its focus is on the efficient and effective use of building materials. The prime objective of the Campus is to show how the building stock can be used and improved to counteract material shortages, align construction methods with the circular economy and avoid construction waste and emissions. In February 2022, the BBSR published a call for funding; from the project proposals received a total of 31 teams were subsequently selected for participation in the Pop-Up Campus. A thematic focus of the call was on the intelligent further use and construction of the building stock. The range of contributions includes technical aspects such as new material combinations from renewable raw materials, robotic manufacturing processes, material-efficient support structures as well as strategies and discourses on the future development of the built environment.

The task of the Zukunft Bau Pop-Up Campus is also to connect junior researchers from various universities with

Visualisation of the Zukunft Bau Pop-Up Campus in Aachen

Source: RWTH Aachen/Jakob Naujack

building industry practice, with municipalities and interested citizens and to place the dealing with the building stock at the centre of training and construction practice. Between the opening on 9th June and the closing ceremony during the Campus weeks from 29 August to 9 September 2022, various events and workshops will take place continuously in the Campus building. Students and graduates will show their contributions on the Campus, work on it and present their results to the (professional) public. The foyer of the building will serve as an exhibition space, the former shop windows will become showcases which will display a changing variety of topics. Old workshop and office rooms will be reactivated, local materials and furniture used for recycling and upcycling projects. Specialist conferences and side events at various locations will round off the programme. An interactive calendar of events can be found at https://pop-up-campus.de/, with detailed information on the various projects, videos and impressions of the work on site.

All physical research results and prototypes will either be reused elsewhere or fully recycled. This process is also part of the research activities in the context of the Zukunft Bau Pop-up Campus 2022, the results of which will be consolidated in a final publication.

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The Reichstag building in Berlin

Source: frank peters – stock.adobe.com

Retrieving information about the building stock in Germany with remote sensing

by Thomas Tschirner

Buildings are a key lever for achieving climate protection targets. According to expert estimates, building-related greenhouse gas emissions in Germany, including the upstream and downstream processes associated with the construction and operation of buildings, but also with their maintenance/modernisation and demolition currently account for about 40% of total emissions. However, buildings also play a central role in adapting to the consequences of climate change and developing a circular economy.

Despite its importance, information on the entire building stock in Germany is very fragmentary. For example, there is a lack of information on the structural conditions and energy performance of the building stock, or the potential of buildings to adapt to climate change.

However, recently there has been substantial progress in the field of remote sensing. An increasing number of remote sensing systems with more powerful sensors are producing huge amounts of data in earth observation. At the same time, growing IT capacities enable new methods for processing and evaluating these large quantities of data.

The research project "Concept development for the acquisition of information on the building stock in Germany from remote sensing data", supervised by the BBSR and carried out by the Smart Cities and Spatial Development team of the German Aerospace Centre (DLR), was designed to explore what contribution remote sensing can make to the efficient generation of knowledge about the building stock.

As a result, the DLR team describes established and experimental processes for the analysis of remote sensing data of individual buildings and the nearby built environment.

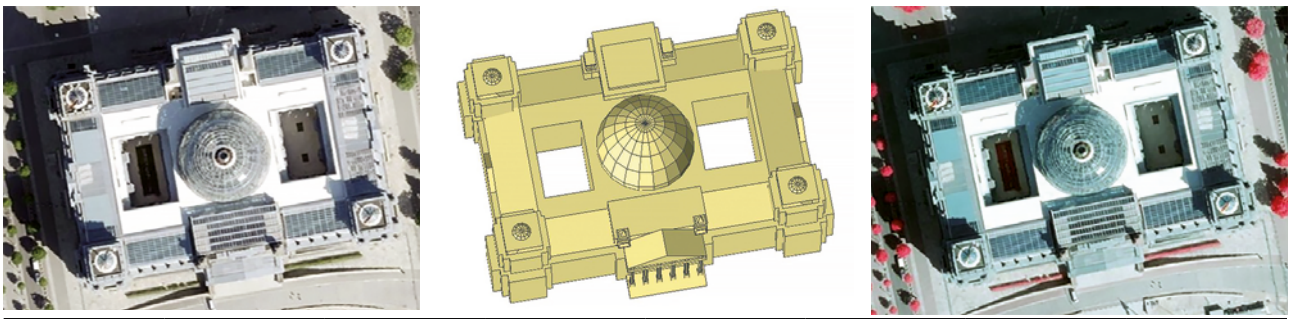
Data sources

Pros and cons describe possible data sources for remote sensing data. The examples of data sources evaluated in the project range from public satellite data from Copernicus Sentinel missions to official aerial photography. The data is comprehensively combined with information provided by the Authoritative Real Estate Cadastre Information System (ALKIS) in Germany including information such as building perimeters and 3D building models (levels of detail LOD).

Use synergies

The combination of official cadastral data and information from remote sensing methods formed a focal point of the

Example: Building-specific information on the Reichstag building (on the left: DOP20© aerial photograph as true colour image; in the middle: LoD2© of the Reichstag building; on the right: DOP20© aerial photograph as false colour image).



Property	Building category	Building function	Building volume	Roof type	Roof material	Green roof	Solar panel
Reichstag building	Nonresidential building	Goverment building	394,000 m^3	Flat roof Dome roof Gable roof	Glass Concrete Aluminum	No	Yes

Source: BKG/DLR

investigations. Both sources of information retrieval have specific strengths and weaknesses that, when used in combination, may lead to an improved overall result. Data from survey agencies are quality assured but subject to a time offset. Remote sensing data are available in a timely manner, but are subject to many uncertainties due to the limited spatial resolution in the size range of the buildings. Against this background, the systematic use of synergies combined and integrated with established mechanisms of data and information collection at Federal Government, state and municipal level was considered to be fundamental. As a result, the project demonstrates that a combined application may bring benefits to both sides: for example, quality-assured data by the survey agencies may serve as a basis for training evaluation algorithms, and the models trained in this way can then recognise new objects that are not yet included in the survey data.

Catalogue of methods

The algorithms listed in the created catalogue are evaluated according to various aspects: Is the data basis already available through regular surveys and aerial flights, what costs can be expected or what operational effort required to implement the methods? Thus, depending on the problem, a good basis for decision-making is also available for remote sensing data to generate knowledge about the building stock. The addressees of this catalogue of methods are national authorities, but also federal states, municipalities or cities that want to improve the information base for their territories.

In the context of individual buildings, the catalogue presents evaluations of building volume, floor area, and roof shapes, as well as the detection of green roofs and solar systems. For buildings and their surroundings, an evaluation of the degree of sealing, the proportion of green space and temperature risks are considered, among other things.

Future prospects

Some of the proposed methods cannot yet be applied across the national territory, because up to now, the necessary data has only been collected for selected areas. Particularly promising is the evaluation of hyperspectral images, i.e. images that also include other wavelength ranges of electromagnetic radiation in the infrared and ultraviolet range, that are invisible to the human eye. Potentially, this may be used to identify material classes of roof coverings or of settlement areas. The exemplary application for Munich described in the report may serve as an incentive for interested municipalities to include hyperspectral images in their regular surveys.

In a follow-up project, selected methods are to be applied throughout Germany to subsections of the building stock (federal properties) in order to further close the existing knowledge gaps in this subarea and to evaluate the practicability of the applied methodology.

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Save the date: 15th Federal Congress on National Urban Development Policy

The German Federal Ministry for Housing, Urban Development and Building (BMWSB), together with the Conference of Building Ministers of the German federal states, the Association of German Cities and the German Association of Towns and Municipalities, is pleased to invite to the 15th Federal Congress on National Urban Development Policy. The event will take place under the title "Urban Transformation – Achieving Sustainability " from 14 to 16 September 2022 in Berlin. The Congress is planned as a two-day on-site event at STATION Berlin and will close with excursions on 16 September.

The Congress will focus on current approaches and strategies of urban development policy as well as on ideas for a sustainable and integrated development of urban and rural areas on a national, European and international level. Exciting excursions, side events organised by various partners and a project fair will also be part of the Congress programme.

More information can soon be found at:
www.nationale-stadtentwicklungspolitik.de (in German).