

# Internet Presentation of Real Estate Market Data in North Rhine–Westphalia (NRW), Germany\*

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## Summary

The committees of experts on real estate value in NRW provide standard ground values and general pricing information for developed real estate throughout the country, which is freely accessible via the Internet portal BORISplus.NRW. The information is derived from purchase contracts completed in NRW every year, which are registered and evaluated by the committees.

The Internet portal »www.borisplus.nrw.de« is based on the German spatial data infrastructure and uses international OGC standards such as WMS and WFS, which means the standard ground values can also be used for the geoportals of private operators.

The initial version, BORIS.NRW, was launched in 2003 and was replaced in October 2008 by the redesigned version BORISplus.NRW. 17000 registered users and more than one million hits per month are a sign of high acceptance, not least thanks to a service that is mostly free of charge.

## Zusammenfassung

*Die Gutachterausschüsse für Grundstückswerte in NRW stellen in dem Internetportal BORISplus.NRW für jedermann flächen-deckend Bodenrichtwerte und eine allgemeine Preisauskunft für bebaute Grundstücke bereit. Basis sind die in NRW jährlich abgeschlossenen Kaufverträge, die von den Gutachterausschüssen registriert und ausgewertet werden.*

*Das Internetportal »www.borisplus.nrw.de« basiert auf der deutschen Geodateninfrastruktur und nutzt internationale OGC-Standards wie WMS und WFS. Dadurch können die Bodenrichtwerte auch in den Geoportalen von privaten Betreibern genutzt werden.*

*Die erste Version als BORIS.NRW startete schon 2003, BORISplus.NRW ging mit neuem Design im Oktober 2008 ins Internet. 17000 registrierte Nutzer und über eine Million Seitenaufrufe pro Monat zeigen die große Akzeptanz, die auch auf einem weitgehend kostenfreien Angebot basiert.*

## 1 Committees of Experts on Real Estate Values in Germany

The committees of experts on real estate values in Germany were first introduced by law in 1960. Their aim was and still is to provide transparency in the real estate market in order to prevent excessive and erroneous trends.

The special set-up of the committees of experts has proved very successful throughout its history of almost 50 years.

The responsibility for the committee of experts generally lies with the federal state. Each committee of experts

covers a town or district, and its members are volunteers who are highly familiar with the real estate market. These are local real estate experts, such as architects, building surveyors, estate agents, experts from banks and sworn experts.

Each committee of experts is supported by an office, which is usually located at the land surveying and cadastral office or the town planning office. The offices receive copies of all real estate contracts that are completed within the respective town, and the relevant information is fed into a purchase price database. This results in a large amount of data, which can be used to deliver mathematic-statistical evaluations for the analysis of the local real estate market. On this basis, the committees of experts have the following tasks:

- provide information on market value based on the purchase price database,
- derive data to assess the current real estate market,
- produce an annual publication of data in the form of a standard ground value map and a real estate market report,
- prepare valuation reports on fair market value and rent value.

The responsibility for organisation and task distribution lies with the 16 federal states, each using their own organisational model. North Rhine-Westphalia currently has 79 committees of experts, based at the offices of city and district councils.

## 2 Building a Spatial Data Infrastructure in Germany

In 2003, the German Federal Government decided to build a national spatial data infrastructure. This is controlled by a steering committee in which the different levels of government are represented.

The spatial data infrastructure in Germany (SDI-DE) is a joint project of the federal, state and local governments. The aim of the SDI-DE is to establish a nationwide and cross-departmental network of spatial data in Germany to ensure that geoinformation will become a more important factor in decision-making processes in administrative, economic and political sectors. Apart

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from the monitoring of national trends, the SDI-DE will also observe developments at a European (INSPIRE) and global (GSDI) level.

The SDI-DE steering committee has the following tasks (www.gdi-de.org):

- develop a concept for an open SDI in Germany that will form part of a future European spatial data infrastructure (GDI-DE 2007),
- control and coordinate the measures taken by state, local and federal governments in terms of the development, continuation and implementation of standards in European and international spatial data infrastructures,
- define model projects for the implementation of networked spatial data portals in Germany; based on the principle »some develop it and everybody can use it«,
- ensure the compulsory provision of the national geodatabase (NGDB) by the public authorities at federal, state and local level.

### 3 The »BORIS.NRW« project

With the arrival of the Internet at the end of the 90s, the committees of experts faced the challenge of using this new medium for the provision of real estate data. For this purpose, a project group was formed in NRW in 1998. A link portal was set up to collate the addresses and services of the 79 committees of experts on real estate value in NRW. Some of these also provided their standard ground value maps as scanned tiles via the Internet.

The major breakthrough came with the creation of the standard ground value information system BORIS.NRW in 2003 (»BODenRIchtwertinformatiOnsSystem NRW«).

BORIS.NRW includes the following essential elements (Dietrich et al. 2004):

- One common Internet portal to access all standard ground values in NRW. It allows an address search by municipality, street name and house number or a geographical search by a series of scales of different official maps.
- For each selected address the user receives a map section containing details of the relevant standard ground values.
- The explanatory characteristics of the standard ground value can be activated by additional functions (left mouse button, pop-up window).
- The user has the option of selecting one of the following map backgrounds:
  - German Base Map 1 : 5000,
  - Digital Topographic Map 1 : 10000,
  - Topographic Map 1 : 50000,
  - Local Map 1 : 10000/20000.
- The standard ground values plus characteristics can be accessed free of charge.

- It is also possible to purchase an »official« printout of the relevant section of the standard ground value map including explanations on letter-headed paper.
- The real estate market report is available online as a PDF document – either as a general version (market transparency for everyone), which can be downloaded free of charge or as a full version (required valuation data for experts), subject to charge.
- Access to items available on BORIS.NRW that are subject to charge requires an one-off registration with the Centre for Geoinformation of the federal state of NRW and the allocation of user identification by email. Once these steps have been completed, the user can access the relevant data using his/her password and will be charged according to the cost of the information downloaded.
- A standardised dataset of the standard ground values (BoRi.xls) is available nationwide. This is published by the committees of experts on an annual basis.
- The dataset BoRi.xls is an independent product which can be purchased and used by third parties, subject to a licence agreement.
- In terms of the marketing of the BoRi.xls dataset, the Internet is only used for advertising and sales are processed via the usual channels.

Since its launch, BORIS.NRW has become the most successful e-government project of the federal state of NRW. 17000 users have registered to purchase services through the website and more than one million hits are recorded every month.

BORIS.NRW contains standard ground values, i.e. market information on undeveloped real estate. It does not provide any information on real estate that has already been developed.

However, this has now changed with the introduction of the enhanced version BORISplus.NRW in 2008, which informs users about price levels of single-family residences and condominiums in NRW.

### 4 The Enhanced Version »BORISplus.NRW«

Five years after BORIS.NRW was launched, it was time for the Internet presence to be redesigned for three reasons:

1. As the demand for real estate market data of condominiums and single-family residences increased, standard ground values alone were no longer sufficient.
2. The technical concept of BORIS.NRW was conceived between 2001 and 2002 – at a time when spatial data infrastructures were only developed conceptually, and standards such as those of the OGC had not yet been sufficiently defined and established. For this reason, BORIS.NRW was based on a proprietary design; maps, data and services were encapsulated within the programme.

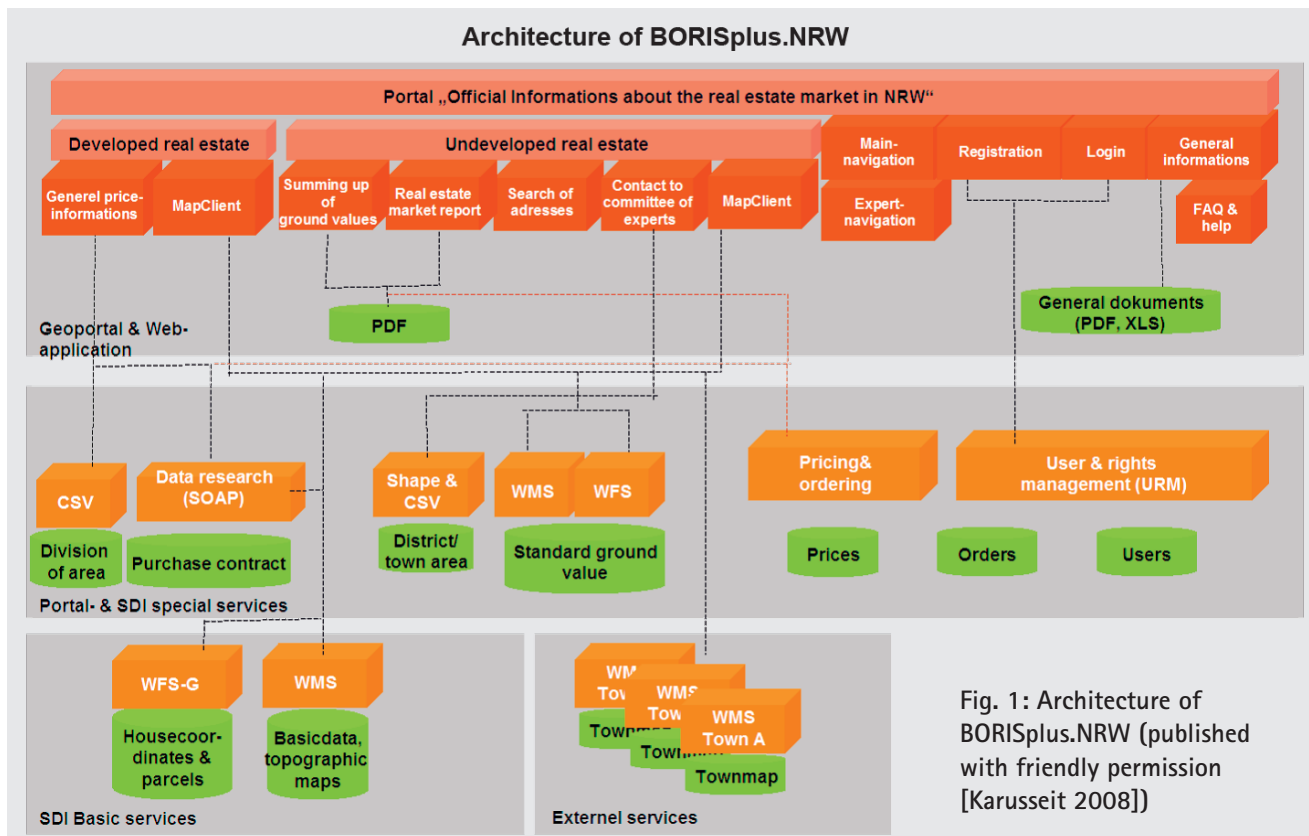


Fig. 1: Architecture of BORISplus.NRW (published with friendly permission [Karusseit 2008])

3. From 2004 on, federal and state governments agreed to develop model projects for implementing the national spatial data infrastructure. One of these model projects (in addition to the project »protected areas«) was the creation of a national information system for standard ground values. The project was successfully launched in NRW and was to be expanded to the remaining federal states. The project, called »networked standard ground value information system« (VBORIS), defined the integration of standard ground value information into a spatial data infrastructure (Liebig 2008).

These new concepts were implemented in BORISplus.NRW. Based on an open spatial data infrastructure, it uses standardised architectures such as WMS, WFS, and WCS etc. The data model of the standard ground values conforms to the national standard. The background maps for the presentation of standard values and purchase prices are available from spatial data servers on the Internet.

The thematic data of the standard ground values can be made available to other users for application in their real estate portals, subject to the relevant licence agreement.

The chart shows the architecture and different layers of BORISplus.NRW:

- Application layer (red): This layer includes the web applications which provide access to the entire system via the geoportals.
- Service layer (orange): This layer includes the portal services, thematic services and basic services (also external) on which the application layer is based.

- Data layer (green): This layer contains spatial data, map data and thematic data supporting the service layer.

#### 4.1 Information on Standard Ground Values of Undeveloped Real Estate

Standard ground values are determined on an annual basis by the committee of experts. The values are based on a statistical analysis of completed purchase contracts for undeveloped real estate. The contracts are categorised in terms of the characteristics that determine their value (size, usability, ...) and are then assigned a standard value (Schmeck 2007).

Information available on BORISplus.NRW can be accessed by entering an address (house number) or a cadastre (parcel). The map section contains details about the standard ground values of the surrounding areas. A mouse click on the value opens another window which shows the relevant characteristics. The standard ground value of the real estate can be determined with a certain amount of expertise by analysing the standard ground values of the surrounding areas.

#### 4.2 General Pricing Information on Developed Real Estate

The general pricing information is based on a specific database search. The committees of experts receive all pur-



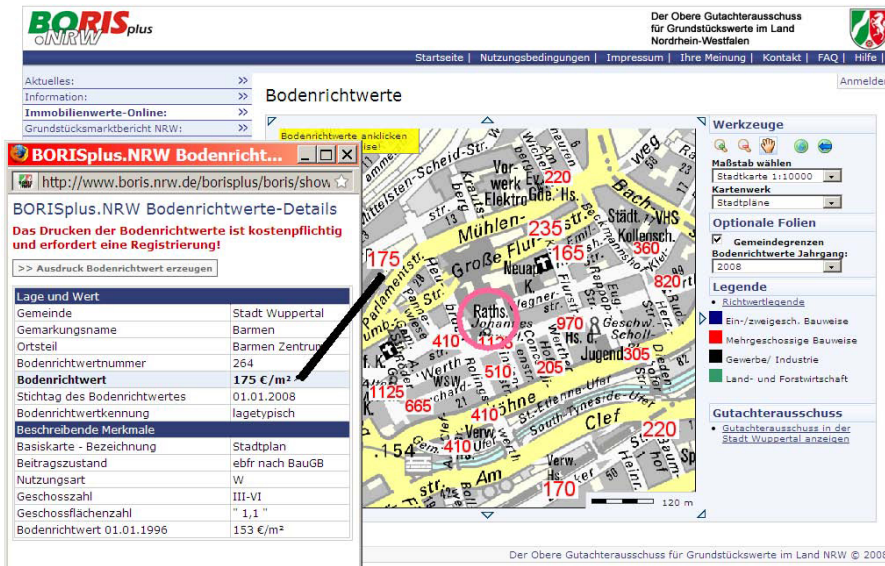


Fig. 2: Screenshot of standard ground value information (www.borisplus.nrw.de)

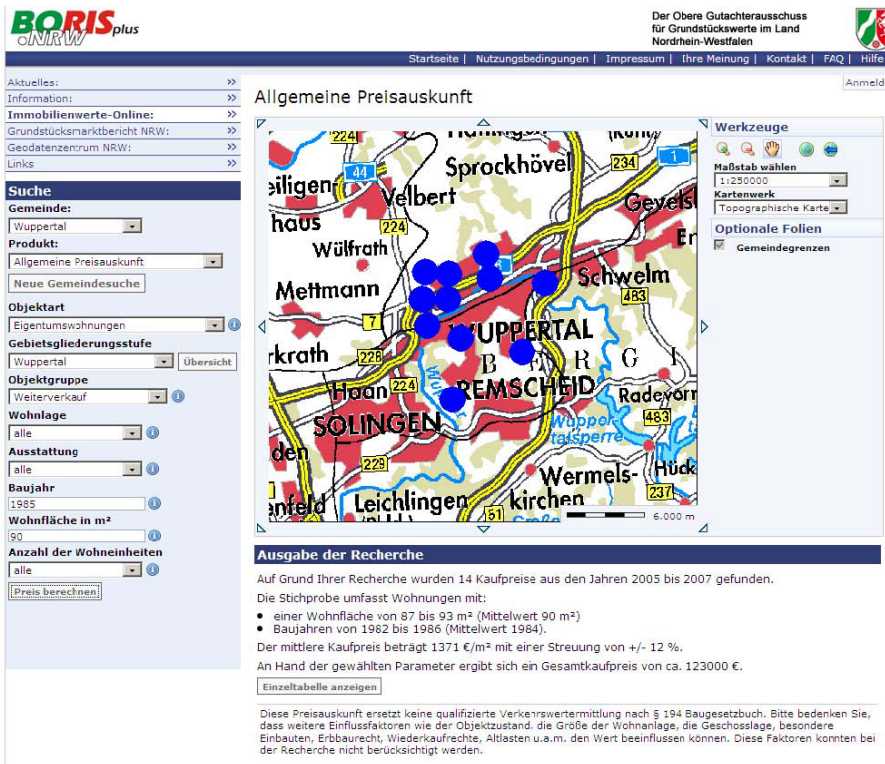


Fig. 3: Screenshot of general pricing information (www.borisplus.nrw.de)

chase contracts completed within their areas – for NRW the number of contracts amounts to approx. 150000 a year. A database search allows the selection of specific purchase contracts, which most closely match the selection criteria.

Possible criteria may include:

- address (town, part of town),
- type of property (condominium, terraced house, ...),
- location,
- year of construction,
- fittings and fixtures,
- size.

The screenshot shows the result of the database search as a mean value, plus sample size and standard deviation. For reasons of data protection, the locations of sample cases are anonymised for the purpose of this search.

The search, including the on-screen information, is free of charge; a PDF printout may be purchased. For billing purposes, the user is requested to complete an one-off registration process. Monthly bills are issued by the Centre for Geoinformation NRW.

This pricing information cannot replace a qualified valuation according to legal requirements, as it does not take into account all value-specific factors and no site surveys are carried out.

## 5 Looking ahead

With the reform of the German Inheritance Tax Law, which took effect on 1 January 2009, the committees of experts face new tasks when it comes to valuating real estate.

With the Internet portal BORISplus.NRW we have created a platform that can provide even more data prepared by the committees via online access. Our goal for the next few years is therefore to use this platform to provide more specific data required for valuation by real estate experts in a simple and cost-effective way.

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