

Hamburg voraus

INTERNATIONAL BUILDING EXHIBITION HAMBURG Gateway to the World Education Centre

September 2013



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Gateway to the World in the Elbe Islands Education Landscape

Educational issues on the Elbe Islands have achieved a new focus since the Future Conference in 2002. That event saw the creation of the Wilhelmsburg Education Forum, a combined effort between different educational establishments with the aim of implementing joint projects and sharing ideas about education-related issues among its panel, the Open Education Forum. In 2005 the Elbe Islands Development Partnership, a three-year project with EU funding, called for an education and building exhibition, and thus laid the foundations for a cross-cutting project, the "Elbe Islands Education Drive", as part of the International Building Exhibition Hamburg (IBA).

The inhabitants of the Elbe Islands are young, culturally diverse, and often educationally disadvantaged. About 15 per cent of young people leave school without any qualifications and the proportion of pupils achieving the high school diploma is 29 per cent, significantly lower than the Hamburg average (54 per cent). As a result, many children and young people from families with a poor educational background and low income are unable to adequately develop their potential under the current circumstances.

Through the "Elbe Islands Education Drive" the IBA is supporting local education, training, and advice services by creating an education landscape with linked educational programmes. The intention is to improve social integration opportunities for the people living in the area, and to make the Elbe Islands more attractive as a place to live. The educational programme within this arrangement covers all areas of education, from day nursery and pre-school to high school and the transition into a job and lifelong learning as an adult. This programme is geared towards the needs of the people within the district, and acts as a response to the prevailing social conditions. Five new places of learning are being created on the Elbe Islands as part of the "Elbe Islands Education Drive", with support from the IBA. Covering a range of functions, these institutions strengthen the existing networks and neighbourhoods. The local institutions are thus given the space to develop their programmes, and to extend them by collaborating with one another (see Fig. 1). The newly created places of learning should facilitate access to education for all residents, not least thanks to their welcoming architectural design, which opens the buildings to the district and makes them an attractive place to meet and spend time. Projects included in the "Elbe Islands Education Drive":

- House of Projects die mügge
- Centre of Language and Exercise
- MEDIA DOCK
- Stübenhofer Weg Education Centre
- Gateway to the World Education Centre

Other IBA projects that form part of the Elbe Islands Education Landscape:

- University of Neighbourhoods
- WÄLDERHAUS (Forest House)
- InselAcademie and Climbing Hall
- Johanna Bakery



Fig. 1: Elbe Islands Education Landscape - new places of education and networks

Gateway to the World: a District Education Centre

The "Gateway to the World Education Centre" houses three school facilities: Helmut Schmidt Grammar School, the Elbe Island School (primary), and the Regional Education and Advice Centre, including the Remedial Language School and REBUS, plus the following five non-school educational organisations:

- verikom Association for Intercultural Communication and Education
- Hamburg Adult Education Centre
- Wilhelmsburg / Veddel parenting classes
- Hamburg Further Education
- "Theater im Strom" theatre company.

The building meets the district's need for an education centre with its communal, public area, the Gatehouse, which is open to pupils and all local residents. This is where the non-school organisations offer advice and support to improve the social conditions and educational chances of the district's population. The programmes offered here are intended to cover as wide a spectrum of the district's social needs as possible, ranging from immigration and social counselling, educational advice, parenting classes, help for families, careers guidance and advice on further training.



Fig. 2: Central entrance area

The social and educational programmes on offer are closely linked to one another within the Education Centre. This improves the quality of collaborative work between the school, the non-school educational organisations, and the district's residents.

All staff members aspire to effective cooperation with parents. Against this backdrop, the integrated parents' café is an important meeting place for informal chats and socialising. This opens the way for additional professional support services, while exhibitions, talks, and cultural events bring new momentum.



Fig. 3: Parents' café – a meeting place for informal chats

The interplay between the activities inside the centre and outside it, within the district, is enhanced by the architecture of the building itself. The Education Centre is integrated into the district, and has a positive effect on Wilhelmsburg as an information and communication centre, and as a place of lifelong learning.

Project Outline

The "Gateway to the World" is the largest educational building project to be carried out as part of the IBA. It was constructed according to a design by bof architekten, Hamburg, in conjunction with Breimann & Bruun Landschaftsarchitekten, Hamburg.

The Education Centre project consists of new build, to the west of Krieterstrasse, and the redevelopment and upgrading of the buildings and outdoor areas of the Helmut Schmidt Grammar School, to the east of Krieterstrasse.

The existing parts of the grammar school have been enhanced with new, open-air sports facilities and a sports hall, as well as a school and business centre for initiatives that bring together the school and local enterprises. In addition, the environmental and science centre houses new spaces for specialist science teaching within the school. The new build contains rooms for classes 0-4 of the primary school (the Elbe Island School), the Regional Education and Advice Centre, including the Wilhelmsburg Remedial Language School and REBUS, and study facilities for classes 5-6 of the grammar school. There are also music and art rooms, an environmental centre, an assembly hall, a canteen, sports areas, and spaces for users from elsewhere.

Students can deepen their understanding at a virtual geo-workshop, which allows lessons to be presented as though in a planetarium.

The heart of the "Gateway to the World" is a multifunctional centre, the Gatehouse. This communal area offers advisory services and adult education programmes. It is open to all local residents.



Fig. 4: Layout: new and existing buildings

PROJECT PARTNERS

Clients

SBH I Schulbau Hamburg; Ministry for Schools and Vocational Training; Ministry for Urban Development and Environment; Ministry for Work, Social Affairs, Families and Integration; Ministry of Culture; Hamburg Mitte District Authority; IBA Hamburg GmbH; GMH I Gebäudemanagement Hamburg GmbH

Architecture

bof architekten, Hamburg

Building tenders and construction management

bof architekten with DGI Bauwerk Gesell-schaft von Architekten mbH, Hamburg

Colour concept

bof architekten with Florencia Young, Berlin

Management system

Norbert Thomas, Hamburg, with bof architekten

Landscaping

Breimann & Bruun Garten- und Landschaftsarchitekten, Hamburg

Technical building equipment and energy concept

EGS-plan Ingenieurgesellschaft für Energie-, Gebäude- und Solartechnik mbH, Stuttgart

Technical building equipment tenders and construction management Ingenieurbüro Ridder & Prigge GmbH &

Co.KG, Schenefeld

Electrical design

EGS-plan with BaurConsult Architekten und Ingenieure GbR, Hassfurt

Kitchen planning

cooking solution GbR, Hude

Statics Schumacher & Gerber Ingenieurbüro für Bauplanung und Baustatik GbR, Hamburg

Structural analysis Ingenieurbüro OSJ, Hamburg

Fire safety WTM ENGINEERS GmbH, Hamburg

Wooden façade fire protection concept Ingenieurbüro für Brandschutz & Fassaden Ingolf Kotthoff, Leipzig

Surveyor

wfw NordConsult Ingenieurgesellschaft für Bauwesen und Vermessung mbH, Hamburg

Building site survey

Steinfeld und Partner GbR, Hamburg

PROJECT INFORMATION

Construction costs approx. € 60 million

Western site area 18,780 m2

Eastern site area 27,925 m2 Gross floor area 32,835 m2

Energy standard Passive House (new build)

Construction period autumn 2010-summer 2013

Urban Planning Idea

The buildings in the area around the "Gateway to the World Education Centre" are very varied in appearance. Small structures are mixed in with large, while detached houses stand opposite multi-storey apartment blocks. The complex of new buildings making up the Education Centre blends seamlessly into this mixed urban fabric.

The urban structure of the late 19th century railway district, which borders the Education Centre's western boundary, was reflected in the new design, and the fragmented block structures at the eastern end of this area were given appropriate closure in planning terms, with the creation of clear edges.

A square was created along Krieterstrasse, between the new build and the existing structures of the Helmut Schmidt Grammar School to the southeast. This provides the area with a firm identity that chimes with the special significance of the Education Centre within the district.Krieterstrasse was integrated into the design by implementing the principle of a "mixed traffic area", where all road users have equal rights.

The modules of the new build are arranged in such a way that the Education Centre is recognisable as a coherent and innovative part of the city in terms of urban space, architecture, and function.

The positioning of the Gatehouse is particularly important, as it is intended to welcome in the public, encourage an exchange between the interior and exterior, contribute towards enriching public life, and mark out the Education Centre as a notablefeature of the district.



Fig. 5: Aerial photograph, June 2013

Architectural Concept

The entire "Gateway to the World" school new build can be subdivided into five different sections, each with one or two upper floors, while the Gatehouse has three upper floors. To make identifying them easier, in Fig. 6 these structures have been labelled A-E. .

Buildings A-D are located on the site on the left side of Krieterstrasse, while building E is on the

site of the Helmut Schmidt Grammar School on the right side of the street. The upper floors of buildings A, B, and C house the classrooms for pupils of the Education Centre. The ground floors are for other types of school use. Building D (the Gatehouse) is allocated to interschool activities and the premises of non-school Education Centre partners.



Fig. 6: Layout: functions of buildings and outside space

Building A

Building B

Building C

ReBBz Regional Education Centre (incorporating the Remedial Language School and REBUS) and some rooms allocated to the Elbe Island School

Special features on the ground floor:

- special education
- gym and changing rooms
- environmental laboratory
- hall

Elbe Island School

Special features on the ground floor:

- environmental laboratory
- two art / workshop rooms
- bicycle workshop
- kitchen
- "Book town"
- psychomobility room
- school kitchen
- hall

Study facilities for the Helmut Schmidt Grammar School (classes 5-6)

Special features on the ground floor:

- 3-pitch sports hall
- equipment rooms
- fitness rooms
- installations room

Features on the first floor:

- changing room
- showers

Building D

Gatehouse (multi-purpose centre) Features on the ground floor:

across schools use;

- canteen and kitchen
- teaching kitchen
- parents´café
- info point
- central management offices
- auditorium with theatre stage and rehearsal space

non-school use:

• Adult Education Centre office

Features on the first floor:

non-school use:

- self-teaching centre with library
- rental units for non-school users
- staff café

Features on the second floor:

- art rooms of the Helmut Schmidt Grammar School
- across schools use:
- music rooms and related libraries
- "Religions and cultures room

Features on the third floor:

• caretaker's flat

Building D Virtual geo-workshop

Features on the ground floor:

 energy control centre for the new build with heat generation (wood pellets and solar thermal energy) for heating and warm water

Features on the first floor:

• Virtual geo-workshop, including a multi-purpose demonstration room with curved projection wall

Features on the second floor:

caretaker's flat

The Road of Learning

Buildings A-D are connected by a corridor that runs along the ground floor inside the new buildings. The communal and public areas are mostly found along this "Road of Learning".

This "Road" begins at the "Meeting Place" (see Fig. 7), at the central entrance area and the break hall for the Education Centre.



Fig. 7: Central entrance area, the "Meeting Place"

From there the "Road of Learning" leads to the internal, central access steps for the individual schools. The main staircase, made of exposed concrete, has booths with padded seats where children can sit (see Fig. 8).



Fig. 8: Access stairs

The buildings are joined to one another by the "Road of Learning" so that they are not only accessible by all year groups and components of the schools, but also by the public. Within the complex, the individual blocks are designed in such a way that they interlock, thus making them appear as one, while allowing them to retain their identities as individual buildings. The different structures are aligned with one another, providing many different perspectives. Although the individual modules share the same architectural look, they are differentiated in design so that each school area can develop its own identity while remaining part of the whole. The colour concept also helps to give the individual institutions separate identities: a different colour was chosen for each building unit. These colours also appear inside the entrances to the buildings and throughout the interiors, and can be used to aid orientation.

Learning studios and classrooms

In order to make the relationships between the different areas discernible, the school complex'slayout has been based on the design of a Greek polis. This goes far beyond the scope of an "urban site". Rather, the buildings form the framework for a democratic process both inside and outside the school environment, while enabling and facilitating this process. A "co-teaching model" is offered in the schools that make up the Education Centre. According to this education model, two to four classes form separate "learning families". The various rooms of the learning families are therefore arranged in clusters grouped around a large common room or "learning studio". These areas act as additional communication zones and can be used for events. Project groups can hold small theatre and dance performances or exhibitions here, or use the spaces for group work. The studios are furnished with benches, tables and places for lying down.



Fig. 9: Learning studio in the Elbe Island School

Learning is thus a communal, shared experience, and in many cases no longer takes place behind closed doors. The classrooms themselves are bright and friendly, with deep-set windows. Moveable shelves allow the classrooms to be divided up, enabling children to retreat to various places for group or individual work.



Fig. 10: Ground plan of the first floor: teaching areas in the Remedial Language School and the primary (Elbe Island) school (extract)

Courtyards and the Anchorage

The location and cubature of the new build has created three courtyards and a large square (see Fig. 6).

The courtyards are used at breaktime and for sports, while the school garden contains the environmental centre and offers outdoor working areas. The position and design of the square means that it connects the new and existing parts of the school via the road.

Part of the design concept was to join the outdoor spaces using a visually uniform "carpet". Anthracite-coloured concrete creates a calm and consistent appearance, and gives a visual unity to all of the surfaces.

Playground

The playground is the northernbreaktime courtyard of the Education Centre. It can be accessed through the school building or from Buddestrasse, which borders it to the west. The playground's surface is made of anthracite-coloured concrete, enhanced with freestanding shapes made of yellow and green EPDM and sandy surfaces. Slight contours add to the diversity of the play facilities. The EPDM and sandy surfaces also provide areas for playing, climbing frames, and swings. The equipment selected encourages and requires children to use their skills, and is suitable for a wide range of ages and interests.



Fig. 11: Playground

The playground's border with the neighbouring courtyard is marked by a 3 m high wooden structure. This wooden fence forms the back of an area decorated with willow cuttings, and which contains a green, quiet pathway, making this planted area accessible and bringing it to life. The roof terrace and the double slide, which goes back down into the playground, can be accessed via a staircase.

Sports yard

The sports yard is the southern courtyard , which is designed for sports activities and zipping around on scooters and bicycles. The yard can be accessed via the school building, from Jungnickelstrasse, which lies to the west, or from Anlieferstrasse on the southern side.



Fig. 12: Sports yard

The basic design of the sports yard also features anthracite-coloured concrete.

Inside the yard are two small pitches, one made of EPDM, the other asphalt. These pitches have football goals and basketball nets. Three tabletennis tables have also been set up.

At the Jungnickelstrasse entrance is a small bicycle storage facility and a shed for playground equipment.

As temporary parking is planned for the southern part of the sports yard, the area between the small pitches contains a climbing frame structure that prevents cars from driving through to the north of the yard. The climbing frame is modelled on balance beams, and also serves as benches.

School garden

The school garden is attached to the environmental centre and can only be reached through the centre's two studios. The garden opens onto Krieterstrasse, but its hedges and trees serve as a green buffer against the road and are protected by a fence. This area also features anthracite paving and planters, and has benches for conducting lessons outside. Pupils will have the opportunity to create a small school allotment or herb garden.

The Anchorage

The Anchorage, the large and imposing square at the entrance to the Education Centre, links the two school locations (the new build and the Helmut Schmidt Grammar School) across the public road, and brings them together in the "Gateway to the World".

Also featuring anthracite-coloured concrete, the surface is complemented by design objects that

were created following a process that involved pupils, teachers, parents, and local residents. These are mostly "ships", which are scattered over the whole area and serve a wide range of functions: playground equipment and climbing frames, a stage ship, a fountain, and several green spaces, including a ship densely planted with birch trees, which sets the tone for the site. A "carpet" of blue strips symbolises the waters of the Elbe and Wilhelmsburg's identity as an island. Three areas newly planted with trees on the western side of Krieterstrasse complement the composition of multi-storey blocks, blue strips, and steps. Both sides of the space run up to a flight of stairs, which leads to the Agora . The edge is therefore clearly defined, and the pupils are conscious, in fact acutely aware, of the transition to the public footpath and the road (see also p. 19)



Fig. 13: The Anchorage

Canteen

Pupils are served their lunch in the canteen of the Education Centre (Fig. 14). The food is freshly prepared in the production kitchen by an on-site caterer. Around 800 to 1,000 meals are served in the canteen every day. The contracted caterer, Rebional, is particularly keen on using organic and regionally produced food. Having the children eat together is part of the educational concept.



Fig. 14: Canteen



Fig. 15: Ground plan of the ground floor: canteen and Gatehouse (extract)

Energy concept

The "Gateway to the World Education Centre" is remarkable not only for its sophisticated architectural design, but also for its pioneering energy-saving and environmentally friendly construction.

Its new buildings have been constructed to Passive House standard. A mechanical ventilation system with highly efficient heat recovery ensures that the air exchange rates required for a good standard of clean air are achieved during school hours. This demonstrably improves pupils' concentration, while also promoting optimal conditions for learning. The teaching rooms are also fitted with their own, decentralised ventilation units, which can respond flexibly to the way in which the rooms are being used.

Heat is generated by a wood combustion unit in the energy centre. The boiler is fired with wood

pellets and is equipped with the latest emission control technology. In addition, solar collectors on the façade and roof help the energy centre to produce warm water.

Monitoring is carried out in order to ensure that the Education Centre's holistic approach to energy and sustainability is working. This approach is also evident on the outside of the complex. Wood was chosen for the façade as it is a construction material with a favourable carbon footprint.

In 2009 the new build of the "Gateway to the World Education Centre" was awarded the "Building of the Future" prize in a competition run by the Ministry for Economy and Technology with the title "Energy-Optimised Construction 2009 - Architecture and Energy". The energy concept was devised by the Stuttgart-based firm EGS-plan.

Certification by Deutsche Gesellschaft für nachhaltiges Bauen	Preliminary gold certification (valid until end of 2013)
Passive House certification	Certification planned
Mechanical ventilation system with heat recovery	At least 80%
Heat generated by wood combustion unit (two separate boilers)	Power approx. 495 kW
Solar thermal energy (energy centre): Façade collectors Tube collectors (roof)	80 m², 54 kW 40 m², 27 kW
Photovoltaics (decentralised, integrated into roof): Net module area Gross roof area Installed capacity Total annual yield	433 m ² 582 m ² 27,3 kW _{Peak} Approx. 22,100 kWh per year
Specific values for energy reference area (PHPP) Thermal heat energy performance indicator Primary energy value for Buildings A & B Primary energy value for Building C Primary energy value for Building D	15 kWh/(m²a) 51 kWh/(m²a) 53 kWh/(m²a) 65 kWh/(m²a)

Participation

Before the Education Centre opened its doors, the educational institutions that would be brought together under one roof worked with one another to establish educational and social concepts, and how they would be implemented within the space. From the outset, they were a vital link in the cooperative effort between the International Building Exhibition (IBA), the ministries, the local authority, the clients, and the architects, and acted as concept developers and a source of ideas.

In order to cope with the complex technical challenges in good time, a total of 16 interdisciplinary working groups - set up by a local steering committee - developed the necessary concepts (see Fig. 16).

These working groups largely set out the specifications for the international architectural competition, participated in the jury's decisions, and, in countless coordination processes, had a hand in planning how the project would be implemented, right up to the very end. They also informed major financial decisions in terms of equipping the facilities with furniture and media technology. This sometimes laborious process allowed a high level of functionality and a coherent look to be achieved at the new Education Centre. New forms of collaboration were also developed between the school, the daycare centre, and providers of adult education, family support, youth welfare services, school counselling, cultural education, environmental training, and sports. The various users of the Education Centre will also be able to grow closely together on a conceptual level.

This end-to-end participatory approach was only possible because all of those involved placed great value on professionalism and commitment, and demonstrated the necessary willingness to learn. For the architects, in particular, this meant that their design was always being looked at and assessed with fresh eyes.



Fig. 16: Organisational chart for the Gateway to the World Education Centre

Design your District

As part of a competition launched by the IBA Hamburg, this challenge was addressed primarily at pupils, parents, and neighbours of the new Education Centre. It called for ideas to contribute to the design of the public entrance area (the Anchorage), the space on either side of Krieterstrasse that joins the Helmut Schmidt Grammar School building and the new build.

In July 2009 eight classes and two groups of adults presented their designs before a jury,

which was impressed by the contributions. The jury asked the landscape architecture firm Breimann & Brunn to incorporate particularly brilliant ideas into their own proposals. These were then presented to the reconvened jury and all participants in the competition in September. There were three versions of the design, of which the second was later chosen by the jury as the basis for that subsequently adopted. It was given the theme "people and culture", and featured a number of different boats that were used to express cultural diversity, and as a way of exploring the world (see also p. 15 and Fig. 17).



Fig. 17: The design for the Anchorage

Conclusion

With the construction of the "Gateway to the World Education Centre", the Elbe Islands now have a place of learning that responds to the educational needs of the local people by offering an extensive programme. The school should open up all sorts of opportunities in later life for its pupils. Parents and all local residents will also have the chance to access a variety of education, support and advice services here.

The "Gateway to the World" must now demonstrate that a wide-ranging educational programme, improved cooperation, and new spatial possibilities can make a contribution to people's chances of integrating into the district, and help to stabilise disadvantaged areas. Of course, it will only really be possible to talk about measurable success in a few years' time.

One of the main objectives of the "Gateway to the World Education Centre" project has already been achieved, as it has succeeded in breaking down institutional barriers in education. The broad-based participatory development process, whereby all future users of the different educational establishments were closely involved from the planning stage, fostered contact on an equal footing, based on respect. In recent years the institutions have worked together on many successful joint projects, and have shown their willingness to cooperate. Numerous collaborative projects were initiated, and appealing education schemes were developed, involving schools and non-school partners. Existing cooperative efforts were strengthened and new joint projects have been organised.

Overall, these joint projects have made it possible for those involved to identify with the new centre to a high degree. Education is increasingly regarded in a holistic way by the stakeholders. This has already had a knock-on effect: cooperation between the respective directors has carried over to a similar attitude among the employees of the institutions. Cooperation across institutional borders is also promoted by the architectural design. The spaces can be adapted to particular forms of teaching, regardless of the institution. And being in such close proximity allows common rooms like assembly halls, the canteen, or the sports hall to be used equally by all of the institutions. The staff only have to walk a short distance to talk to their colleagues at the other schools. The children, meanwhile, are clearly proud of the new centre and enjoy coming to school in order to learn - they have wholeheartedly accepted it as their building.

With its innovative approach, the "Gateway to the World Education Centre" is set to serve as a model for other educational projects - it should inform schools across the city, and indeed the whole country.

Images

Titel	IBA Hamburg GmbH / Bente Stachowske
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- Abb. 1 IBA Hamburg GmbH / böf
- Abb. 2 IBA Hamburg GmbH / Bernadette Grimmenstein
- Abb. 3 IBA Hamburg GmbH/ Martin Kunze
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- Abb. 5 IBA Hamburg GmbH/ Friedel Luftbilder
- Abb. 6 bof architekten, Hamburg
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