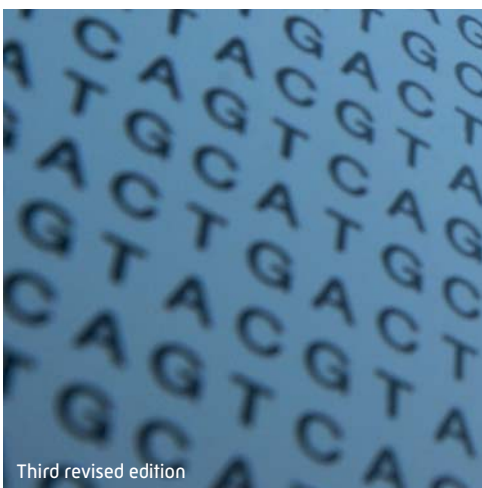


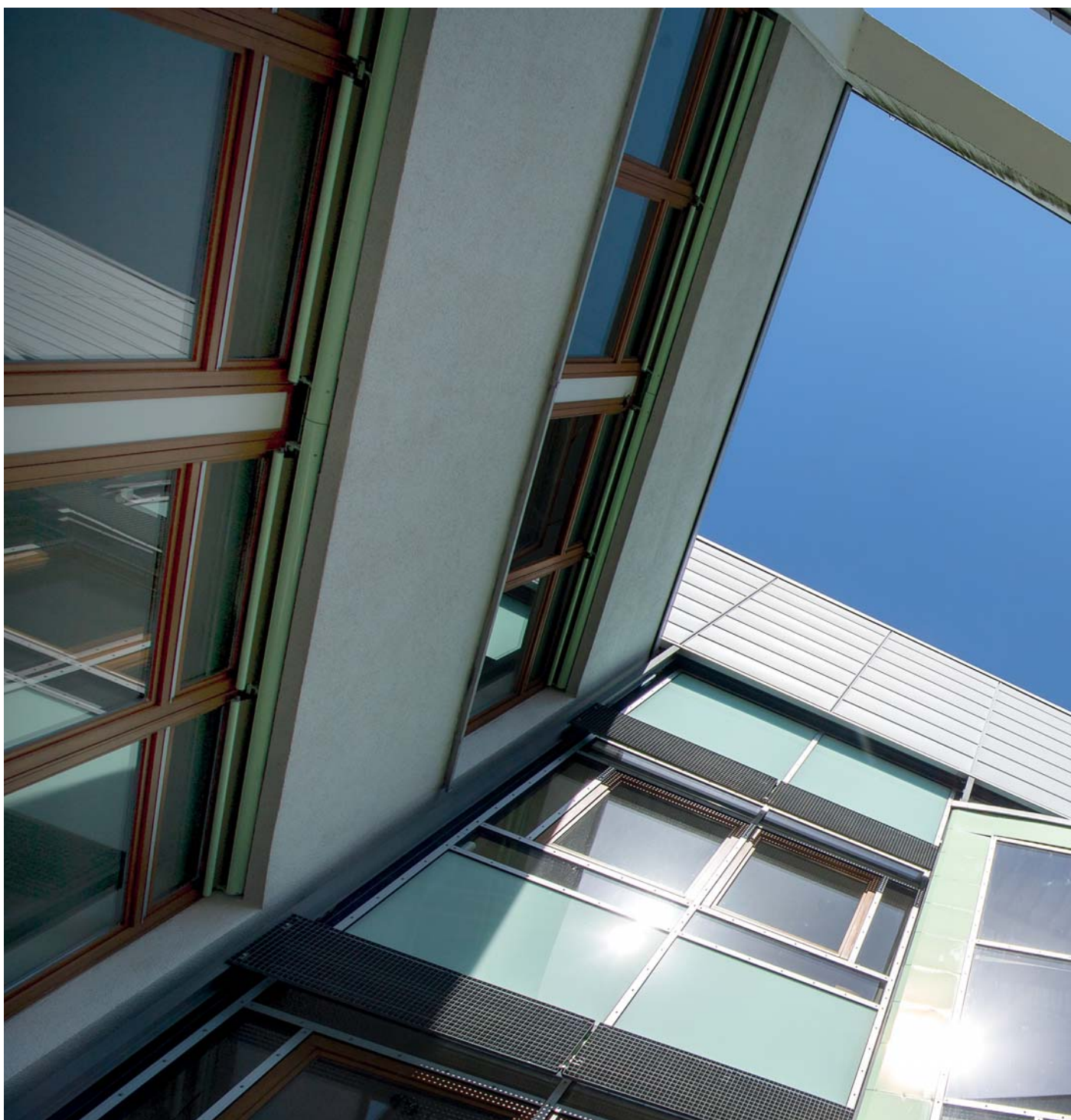
Berlin-Buch

The Health Location of Berlin



Third revised edition





Published by: Campus Berlin-Buch GmbH (CBB), Robert-Rössle-Straße 10, 13125 Berlin, Germany, www.campusberlinbuch.de, in collaboration with the other stakeholders of the health location Berlin-Buch
Editor: Christine Minkewitz, M.A. *Translation:* Carol Oberschmidt, M.A. *Layout:* Thomas Herbell *Photos:* Jens Aßmann/AdG: p. 16; David Ausserhofer/CBB: p. 5; Bernt/ELK: p. 14; private collection Heinz Bielka: pp. 7, 11; Celares GmbH: p. 8; Klaus Dombrowsky: p. 19; doranth post architekten: p. 11; Eckert & Ziegler AG: p. 10; Karl-Heinz Ehlers, p. 19; Peter Himself/CBB: cover page, pp. 2, 3, 4, 8, 9, 16, 17; Marco Urban, Wolfgang Wedel, p. 15; LHQ: pp. 18, 19; Norbert Michalke: cover page; Christine Minkewitz/CBB: cover page, p. 15; Thomas Oberländer/Helios Klinikum Berlin-Buch: pp. 12, 13, 14; Silke OBwald/FMP: p. 6; Barth van Rossum/FMP: p. 7; E. von Brauchitsch: p. 23; Hans Wiedl/AdG: p. 16; Zimmermann/ELK: pp. 14
Printed by: ruksaldruck GmbH + Co. KG
Contact: Phone +49 (0)30 9489 2511, Fax +49 (0)30 9489 3812, email: info@campusberlinbuch.de
© Campus Berlin-Buch GmbH 2019

Editorial

Health City Berlin 2030 – Research Metropolis Berlin – Berlin, a center in Europe for top-level medicine!

Germany's capital has ambitious plans, and in the health location Berlin-Buch we are dedicated to achieving these goals. Here in the last decades a synergy has developed between research and patient care, innovation and therapy. Today Buch is a magnet for excellent scientists from all over the world. Well-established companies work here alongside start-ups, and teams of doctors and researchers work hand in hand. Their motto: "Committed to Health".

The campus in the northeast of Berlin, where construction and investment in cutting-edge technology continue at a rapid pace, is highly attractive. Around 60 high-tech companies have settled in the biotechnology park since 1995 in order to benefit from the immediate proximity and expertise of the three internationally renowned research institutions. Here 1,250 scientists work in the fields of molecular medicine, pharmacology and clinical research.

In the immediate vicinity of the campus three hospitals treat 220,000 patients annually. The largest hospital, a maximum care facility, is one of the most important employers in the region.

Already today, 370,000 employees in the Berlin health industry generate an annual revenue of around 25 billion euros, and Berlin-Buch as the innovation engine of the industry is driving this development forward. Buch has been designated as one of Berlin's eleven "locations of future innovations" and

intends to evolve further as Green Health City. The research campus, among other institutions, is providing important impetus for this endeavor.

In expanding the campus, great emphasis is being placed on ecological, socio-cultural and economic quality to ensure that the campus remains an integrated, vibrant part of Berlin-Buch. Furthermore, Buch institutions and companies promote environmentally friendly mobility and the health of their employees.

Berlin-Buch is becoming increasingly popular as a place to live. Attractive heritage-listed hospital areas have been developed into residential parks. By 2022, the construction of new apartments and schools for more than 2,000 people will be completed in the Ludwig Hoffmann Quartier, the site of a former hospital complex. We invite you to come and see for yourself that research, production, patient care, education and living – all integral aspects of Berlin-Buch – can coexist successfully in one location. Explore the many facets that make up the unique character of this innovative, green and attractive health city.

Dr. Christina Quensel and
Dr. Ulrich Scheller
Managing Directors
Campus Berlin-Buch GmbH



Scientists and physicians from around the world collaborate closely on Campus Berlin-Buch to develop new concepts for the diagnosis, treatment and prevention of diseases.



From L to R:
Dr. Fan Liu, FMP;
Dr. Gaetano Gargiulo, MDC;
Anton Henssen, MD, Charité
Dr. Kathrin de la Rosa, MDC;
Dr. Martin Lehmann, FMP

© Peter Himself / Campus
Berlin-Buch GmbH

Excellent Health Research

Berlin-Buch is recognized internationally for its excellence as a location for science. Decisive for this are the Max Delbrück Center for Molecular Medicine in the Helmholtz Association (MDC) and the Leibniz-Forschungsinstitut für Molekulare Pharmakologie (FMP) as well as the Experimental and Clinical Research

Center (ECRC), which is operated jointly by the MDC and the Charité, and the Berlin Institute of Health (BIH). The ECRC and the BIH are specialized in clinical and translational research. The institutions on the Buch campus collaborate closely and integrate basic and patient-oriented research in a unique way. The results

of this multifaceted collaboration are leading to better prevention, diagnosis and treatment of diseases – increasingly also with marketable procedures and products. The impact of the research location Berlin-Buch on the economic development and the job market situation in Berlin as a whole is increasing.

Top research for tomorrow's medicine Max Delbrück Center for Molecular Medicine in the Helmholtz Association (MDC)

The Max Delbrück Center for Molecular Medicine in the Helmholtz Association (MDC) ranks among the top institutions in the world in basic biomedical research. The MDC scientists seek to understand how the human body regulates itself in order to stay in balance – and thus in good health. They analyze which molecular mechanisms interact when humans age or become ill. Their goal is to recognize diseases as early as possible and to enable targeted prevention and effective and personalized treatment.

For this purpose, the MDC researchers are developing state-of-the-art technologies further. For example, specialists in single cell biology and stem cell technologies, biobanks and cryo-electron microscopy, genome sequencing and editing as well as Big Data and Artificial Intelligence have become well established at MDC. The MDC technology platforms provide powerful tools and expertise for multi-omics analysis, protein production, ultra-high-field magnetic resonance imaging, or sophisticated microscopy techniques.

The CRISPR-Cas9 technology enables the precise modification of different gene sequences simultaneously – an important step towards a better understanding of genetic diseases in humans.



Around 1,700 employees and guest researchers work in approximately 70 research groups at the MDC. Since March 2019, the MDC with its Berlin Institute of Medical Systems Biology (BIMSB) has a second location in Berlin-Mitte. In 2018 the MDC budget amounted to 104.4 million euros in basic funding (90 percent from the federal government, 10 percent from the State of Berlin), along with 42.3 million euros in third-party funding. The Max Delbrück Center is a member of the largest national research organization, the Helmholtz Association. Important part-

ners of the MDC in Berlin are the Charité, the German Center for Cardiovascular Research (DZHK) and the universities. The MDC is well connected in strong networks, both nationally and internationally. As only German institution in the field of molecular biology and genetics, the MDC is among the "Top 20" in the world, according to a publication ranking by Thomson Reuters. The excellent reputation in research attracts experts from around the world. Scientists from 60 countries contribute to the international culture of the location.

Research has an impact! Leibniz-Forschungs- institut für Molekulare Pharmakologie (FMP)

How can processes in the body and the development of diseases be explained on the molecular level? Which drugs can specifically target and intervene in the biochemistry and physiology of the body? Research activities at the Leibniz-Forschungsinstitut für Molekulare Pharmakologie (FMP), Germany's only non-university research institute for molecular pharmacology, are concerned with these questions.

FMP employees conduct basic research with the goal of identifying new bioactive molecules and characterizing their interaction with their biological targets in cells or organisms. These molecules serve as tools in basic biomedical research and can be further developed for the treatment, prevention or diagnosis of disease. For this purpose, researchers from the fields of chemistry, biology, biochemistry, pharmacology, physics and medicine work closely together to optimize the medicine of the future.

The FMP provides state-of-the-art technologies for this purpose: For example, facilities for NMR spectroscopy for the structure elucidation of biomolecules are located in two separate buildings. A third building is currently under construction to house a new spectrometer which will have the currently largest available field strength of 1.2 GHz. To efficiently search for new drugs, high-performance robots in the screening unit test huge substance libraries for their physiological effects.

An exciting phase is beginning at EU-OPENSREEN: The consortium holds up to 140,000 chemical substances for the development of new active substances and bundles the infrastructure of 20 research institutes from seven European countries. The European Commission awarded EU-OPENSREEN the coveted status European Research Infrastructure Consortium (ERIC). Since then, the institutions involved have cooperated in a legal framework, which eliminates regulatory hurdles and simplifies access to shared resources. The Federal Ministry of Education and Research is funding the expansion of the central drug library in Berlin-Buch and the technical equipment of the participating German institutions with around 23 million euros. The FMP remains as initiator and continues to be associated with EU-OPENSREEN as a partner institute.

A total of approximately 300 employees and guest researchers work at the FMP. The budget for 2018 totaled 28.9 million euros, including 8.2 million third-party funds. The FMP is a member of the Leibniz Association.



Mass spectrometry at the FMP: The Structural Interactomics group has tested a new, promising method for deciphering protein networks.

From the lab to the patient Charité – Universitäts- medizin Berlin

The Charité and the MDC jointly operate the Experimental and Clinical Research Center (ECRC) in Buch in order to make findings and developments from the laboratory available to patients quickly and directly.

With a clinical research station, seven interdisciplinary university outpatient departments that cooperate closely with MDC research groups, and the latest technologies, the ECRC offers an ideal basis for patient-oriented research and clinical studies. A cleanroom facility at the ECRC enables the production of pharmaceutical-quality cellular immunotherapies. The equipment in-

cludes metabolism and hypoxia chambers for complex metabolism analyses. The adjacent Experimental Ultra High Field Magnetic Resonance Imaging (UH-MRT) of the MDC supports the work at the ECRC with state-of-the-art imaging techniques.

Translational research – the transfer of research results from bench to bedside – is also the mission of the Berlin Institute of Health (BIH). It focuses on the comprehensive approach of systems medicine and works closely together with the Max Delbrück Center. The Käthe-Beutler-Haus is currently being constructed for the BIH at the Buch site. It will have more than 3,000 m² of state-of-the-art laboratory and office space for scientific infrastructure and for biomedical and clinical research groups. The BIH, Charité and MDC will share innovative technologies and pursue transnational biomedical projects in order to develop new approaches for personalized medicine and novel therapies for chronic diseases.

Future perspectives Investments in the future

Technologies will continue to have a decisive impact on biomedical research in the coming years. As a driver of innovation, the research facilities of the campus are therefore continually investing in expanded infrastructures. The Käthe-Beutler-Haus, a laboratory building of the BIH, is currently being built on the campus in Berlin-Buch. It will offer experts from the research and clinical departments of the BIH, Charité and MDC space for state-of-the-art infrastructure and technologies as well as for joint systems medicine and translational research.

In addition, an Optical Imaging Center with new methods of molecular imaging is being developed. MDC, FMP and Charité are building a joint cryogenic electron microscopy (Cryo-EM) infrastructure, which will also involve the Berlin universities. The FMP is expanding its capacity for NMR spectroscopy with a 1.2-GHz NMR, which will receive its own building.

At present, researchers seeking to understand health and disease cannot do without animal experiments. However, these are constantly questioned, and experiments considered indispensable are being further developed according to the 3R principle (Replace, Reduce, Refine). The new in vivo pathophysiology laboratory (IPL) of the MDC offers particularly good conditions for

this. It is expected to open in 2020. In the immediate vicinity, the Charité is building a Research Facility for Experimental Medicine (FEM).

The MDC has set up an incubator in order to transfer technological developments more quickly into the economy and to promote spin-offs. In addition, the research institutions and the BiotechPark work hand in hand to facilitate technology transfer.

The research institutes are also committed to sustainability as an employer: In conjunction with the BiotechPark, they promote comprehensive health management for the campus, and, the MDC and FMP have been certified as family friendly in repeated audits over a number of years.

Bacterial cell surface with adhesins, with which they attach themselves to the host cells. Scientists of the FMP have elucidated the structure and the biogenesis of an important component of the membrane protein. These proteins could be the starting point for the development of new antibiotics.



Pioneers of science

Many renowned researchers worked in Berlin-Buch. Some made groundbreaking discoveries in medicine and became world famous.

Oskar Vogt (1870 – 1962) is considered to be one of the founders of modern brain research and neuro-



biology. In 1929/30, upon his initiative, the Kaiser Wilhelm Society built the Institute for Brain Research in Buch. Vogt was its first director. Together with his wife Cécile Vogt, he explored the basic structure of the human cerebral cortex. Their daughter Marthe Vogt was a neuropharmacologist. She headed the Department of Neurochemistry in the Institute for Brain Research.

Nikolai Timoféeff-Ressovsky (1900 – 1981): With his research on the fruit fly *Drosophila*, he laid the foundations of modern genetics.



Beginning in 1925, he built up the Department of Genetics in the Institute for Brain Research.

Karl Lohmann (1898 – 1978)



was concerned with biochemical processes in the muscular system. In 1929 he discovered the universal “energy currency” of life, adenosine triphosphate (ATP). Due to his initiative, the Institute of Medicine and Biology of the German Academy of Sciences was founded.

Made in Buch – Quality and Innovation in the Life Sciences

With its clear profile as biomedical science and technology cluster, the BiotechPark Berlin-Buch represents the complete value chain from the scientific finding to the production of marketable innovations. Built up step by step by Campus Berlin-Buch GmbH, the managing company of the campus, it is today one of the leading biotech locations in Germany. This development was supported by public funding.

The growth potential of the biotech companies on campus characterizes the dynamics and economic strength of the location. Buch companies are positioning themselves in international markets with molecular diagnos-

tic methods, medical technology products, therapeutic agents and services for research and the pharmaceutical industry.

Currently, Buch companies are generating revenues of almost EUR 220 million per year. The intangible capital assets of the companies include approximately 180 patents, which often evolved from collaborations with working groups in the research labs and clinics. The economy resulting from this basis profits from the image of the location and from networking.

The health location Buch, with its long tradition of excellent biomedical basic and clinical research as well as clinical expertise, is an

ideal environment for life science companies. The campus atmosphere is conducive to scientific exchange, technology transfer and collaborative projects.

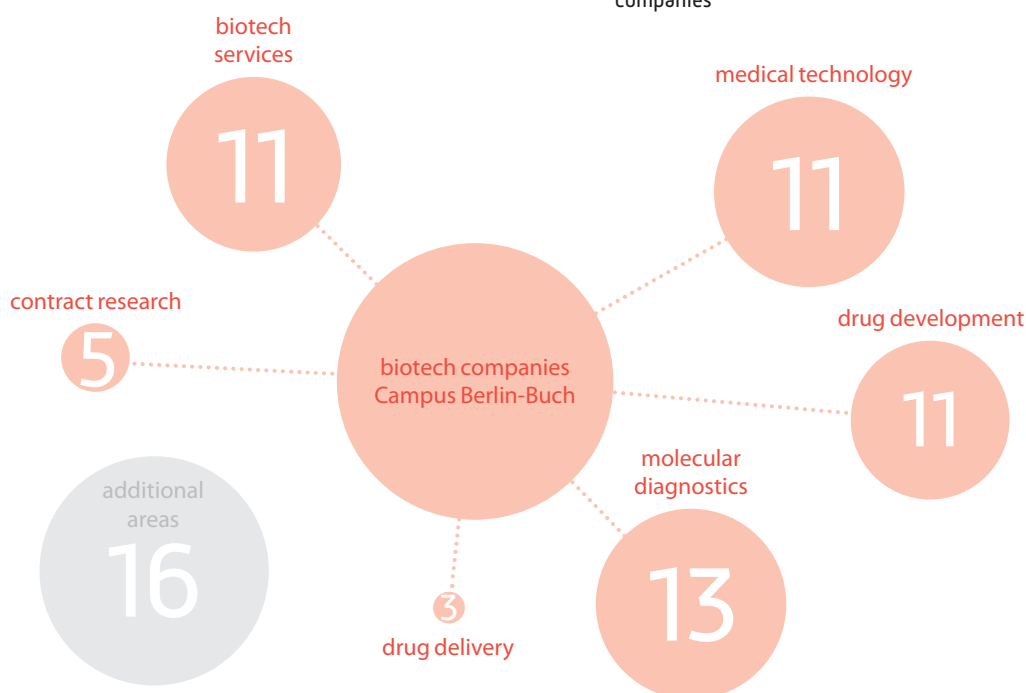
Founders and companies will find favorable sector-specific laboratory and office space with state-of-the-art facilities in the BiotechPark Berlin-Buch on approximately 31,000 m². The number of companies in the BiotechPark has tripled in the last 15 years. The "BerlinBioCube", the new business incubator, will offer young biotech and medtech companies ideal start-up and growth conditions and attractive services on a further 8,000 m² from mid 2022 onwards.



Flexible office and lab space for start-ups and growing companies



GMP production in the BiotechPark



Usable area in the BiotechPark (lab & office space) 31,000 sq. m


Number of companies 62

Number of employees in the companies 800

Occupancy rate for the BiotechPark 95 %

Drugs in
 ➔ Clinical trial 3
 ➔ Preclinical trial 14

As of: January 2019

A man in a dark suit, white shirt, and blue patterned tie is smiling and holding a large, abstract wooden sculpture. The sculpture consists of several curved, polished wooden beams of varying lengths and shapes, some with holes. He is standing in front of a modern building with large glass windows and a red architectural element. The background shows a clear sky and some greenery.

"Lake Werbellin is just half an hour away, and we are located directly on the commuter train line to Friedrichstraße. For companies in the health sector and their staff, our campus in the northeastern part of Berlin is a superb location."

Dr. Andreas Eckert, CEO of Eckert & Ziegler AG

Highly specific cancer antibodies

Glycotope GmbH

Glycotope is a clinical stage biotechnology company applying world-leading glyco-biology expertise to develop highly innovative mAb-based therapeutics in immuno-oncology and oncology. The Company's Glycobodies target specific glyco-epitopes to generate first-in-class products including naked antibodies and bispecifics. The lead candidate, Gatipotuzumab, targets TA-MUC1 and is tested in the clinic for the treatment of solid tumors in combination with an anti-EGFR antibody. Glycotope's technology provides a platform for the development of biopharmaceuticals with an array of modes of action providing a unique offering in cancer treatment. Furthermore, Glycotope offers unique services in the development of biopharmaceuticals: With its GlycoExpress® technology for the production of biotherapeutics, its highly sensitive glycan analytics as well as with capabilities in clinical immuno-monitoring, Glycotope can help companies or institutions in the field of biopharmaceutical development.

Check of a synthesis cassette for a modular lab



Brachytherapy - contributing to saving lives

Eckert & Ziegler AG

The Eckert & Ziegler Group, a company listed on the Frankfurt Stock Exchange with revenues of circa EUR 170 million, is one of the world's largest manufacturers of radioactive components for medical, scientific and metrological purposes. Among other products, the company focuses on cancer treatment applications, nuclear-medical diagnostics and industrial radiometry. Eckert & Ziegler is the European market leader in the field of permanent seed implantation and is the world's only provider of the complete range of brachytherapy products. These include highly effective, tiny implants against prostate cancer. Eckert & Ziegler also produces radionuclide generators and synthesis equipment for the production of radiopharmaceuticals for use in nuclear medicine. The modular lab synthesis device enables hospitals and research institutes to conduct their nuclide synthesis on site in compliance with the highest pharmaceutical quality standards and with optimum radiation protection. The Eckert & Ziegler Group employs around 800 people worldwide.



Quality control of radiation sources prior to delivery

Effective atrial fibrillation therapy

OMEICOS Therapeutics GmbH

Founded in 2013 as a spin-off of the Max Delbrück Center for Molecular Medicine (MDC), OMEICOS succeeded in bringing its drug candidate for atrial fibrillation from an early preclinical concept to clinical testing in just three years. OMT-28 is a small molecule with heart rhythm-stabilizing and cardioprotective activity. All previous data suggest that the scientists have found a way to treat atrial fibrillation causally for the first time. With classical drugs it is possible to treat the symptoms, but not the underlying heart disease. The active substance is a synthetic analogue of a metabolic product of omega-3 fatty acids, the biological relevance of which has been discovered in years of systematic comparative research at the MDC. The drug candidate OMT-28 could provide millions of patients with a safe and effective treatment option.

Individualized cancer treatment

Experimental Pharmacology & Oncology Berlin-Buch GmbH

The company Experimental Pharmacology & Oncology Berlin-Buch (EPO) is a leader in preclinical cancer research in Germany. EPO's highly complex service for the development of novel antitumor substances or treatment concepts is internationally in high demand. The company has state-of-the-art laboratories for in vivo experiments, genetic engineering and radioactive experiments. Specialized in individualized tumor models, EPO provides support for both basic and applied research. The models are used in the identification of new target molecules, in substance screening and in complex pharmacological studies, in which EPO correlates the effectiveness and pharmacokinetics of drug candidates, checks their tolerability and elucidates their mechanisms of action.

With patient-specific tumor models, recommendations can be made for deriving an individualized cancer treatment. EPO works in compliance with strict industry standards for customers across the globe, including pharmaceutical and biotech companies, hospitals and research institutions. In addition, the company participates in EU-wide joint research projects that focus on molecular tumor therapy.

New building for start-ups in the life sciences: From 2022, the BerlinBioCube will provide around 8,000 m² of laboratory and office space.

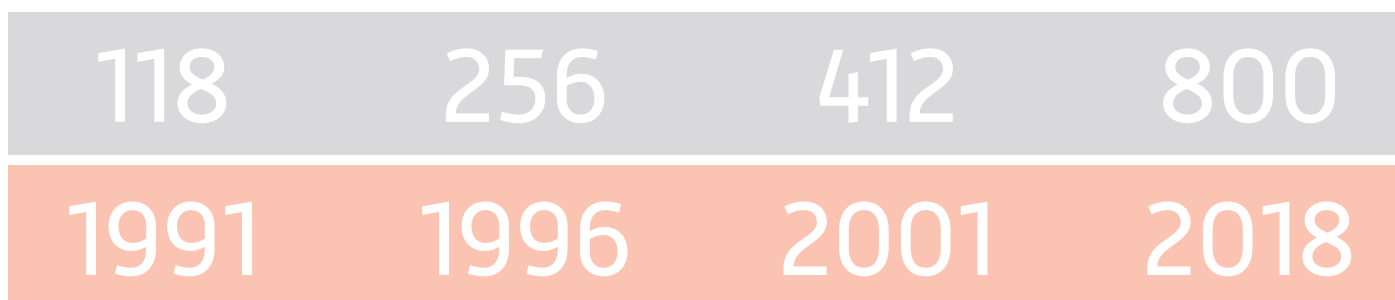


A campus rich in tradition



In 1929/30 a new building for the Kaiser Wilhelm Institute for Brain Research under the direction of Professor Oskar Vogt was built on the premises of what is now Campus Berlin- Buch. At that time, with its neurological clinic, the Institute was the largest and most modern facility in the world in the field of neurology and the leader in integrating research and patient care. In 1947 the Institute for Brain Research evolved into the Institute for Medicine and Biology of the German Academy of Sciences. In 1972 the institute became part of the Central Institutes for Molecular Biology, Cancer Research and Cardiovascular Research of the Academy of Sciences of the GDR. They were among the most prestigious institutions in their areas of expertise. In 1992 the Max Delbrück Center for Molecular Medicine was founded, which gave the initial impetus for the development of today's campus.

Number of jobs in biotech companies





With its polyclinic and specialized out-patient clinics, Helios Klinikum Berlin-Buch offers a spectrum of medical care for patients in all age groups from Berlin, Brandenburg and beyond.

Medical Excellence in Berlin's Green North

The health location Berlin-Buch has long been a leader in medical care in Berlin and Brandenburg as well as beyond the region. Here one maximum-care hospital and two specialty clinics complement each other: Helios Klinikum Berlin-Buch, Immanuel Krankenhaus Berlin (specialized in the treatment of rheumatic diseases) and the Evangelische Lungenklinik Berlin. In cooperation with the Akademie der Gesundheit Berlin/

Brandenburg e.V., also located in Berlin-Buch, the hospitals train their nursing personnel and other specialist health professionals. On Campus Berlin-Buch, seven university outpatient clinics of the Experimental and Clinical Research Center (ECRC) of the Charité and the MDC offer patients highly specialized treatment as well as the opportunity to participate in clinical trials, where new diagnostic and therapeutic approaches are being tested.

Attracted by this environment, a polyclinic and numerous physicians in specialized medical practices that cooperate closely with the Buch clinics have settled here. Care services for the elderly and disabled benefit from the fast access to clinical care provided by Buch's hospitals and clinics. This network is augmented by additional health care services located in Buch.



Modern high-tech medicine and patient-centered care Helios Klinikum Berlin-Buch

Helios Klinikum Berlin-Buch is a maximum care hospital with more than 1,000 beds in more than 50 departments and institutes that offers complete medical care at the highest level. On the Helios campus, inpatient and outpatient care are closely intertwined; doctors, nurses, psychologists, therapists and medical physicists in the inpatient departments collaborate closely with the outpatient departments. Patients from Berlin, Brandenburg and elsewhere in Germany as well as from other countries receive interdisciplinary treatment in specially certified centers. As Oncology Center,



For more than
100 years Buch
has been a renowned
clinic location

Main building
of Helios Klinikum
with more than
50 departments

the Klinikum provides the complex medical care needed by cancer patients. The Klinikum has been certified by the German Diabetes Society as "clinic suitable for diabetic patients DGG". Each year, the team of the Helios Klinikum treats more than 52,000 inpatients and 125,500 outpatients. Besides comprehensive medical diagnostics and treatment, the patients also benefit from the numerous clinical trials, which are carried out at Helios Klinikum Berlin-Buch to further medical knowledge. State-of-the-art medicine is provided with the latest generation of medical technology in 21 operating rooms, with 123 monitoring places for intensive care, intermediate care or neonatology, as well as with tomotherapy, CT and PET-CT, MRI and cardiac MRI, angiography systems, linear accelerators, intra-operative radiation therapy (IOERT) and hyperthermia. These diagnostic and treatment options are available to all patients. Helios has invested more than 336 million euros in the comfortable new building, equipment and technology, as well as in the historically

appropriate reconstruction of the listed buildings.

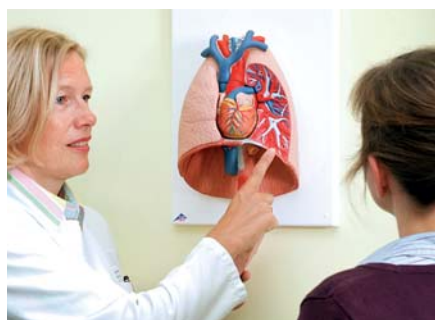
The outpatient polyclinic at Helios Klinikum Berlin-Buch is an integral part of the hospital and performs a significant share of the outpatient care both for the people in Berlin as well as beyond the region. Specialized outpatient clinics round out the spectrum of care. Due to the short distances, the hospital and the polyclinic can share the use of the modern medical technology – such as laboratories, x-ray equipment, and MRI or CT scanners. In the emergency department (with heli-pad), each year more than 55,000 people of all ages with acute conditions are diagnosed and treated around the clock. The spectrum ranges from minor cuts to heart attack, stroke and the care of severely injured accident victims.

Helios Klinikum Berlin-Buch: Active quality management improves the treatment processes, optimizes the treatment quality, reduces the rate of complications and leads to greater patient safety.



Early detection – individual treatment Evangelische Lungenklinik Berlin

The Evangelische Lungenklinik (ELK) is a widely recognized specialist hospital for acute and chronic diseases of the lung and the thorax and its organs. The interdisciplinary cooperation of all local hospitals and departments is based on decades of experience and continues to evolve with the use of state-of-the-art medical equipment. More than 18,000 patients come to the Evangelische Lungenklinik every year for outpatient



or inpatient treatment. The hospital is a co-founder of the Tumor Center Berlin-Buch and a teaching hospital of the Charité – Universitätsmedizin Berlin.

The Lung Cancer Center of the ELK was certified in 2009 by the German Cancer Society. The Department of Thoracic Surgery is one of the first three hospitals in Germany that were certified by the German Society for Thoracic Surgery in 2008 as “Thoracic Center – Competence Center for Thoracic Surgery”. The Center for Respiratory and Sleep Medicine in the Department of Pneumology and Respiratory Medicine is accredited by the German Society for Pneumology and Respiratory Medicine (DGP) as respiratory weaning center. Currently there is only one other such center in the region. Since the end of 2018, the ELK also has a palliative care unit.

Evangelische Lungenklinik:
Experience,
expertise and care

Ranked as one of the best hospitals for lung cancer in Germany in the largest German hospital comparison report (Focus magazine, 2019)

Sixty years of expertise in treating rheumatism Immanuel Krankenhaus Berlin

Immanuel Krankenhaus Berlin in Buch offers high-tech medicine with a focus on the treatment of inflammatory and degenerative rheumatic diseases of the musculoskeletal system. The hospital offers diagnosis and treatment for both outpatients and inpatients: in the outpatient center for rheumatology and in the hospital wards with 80 beds for acute treatment.

The patients are treated with state-of-the-art methods, with specialized care and with naturopathic therapies. A particular focus is on the diagnosis and treatment of systematic rheumatic disorders, vasculitides and

infection-related rheumatic diseases. The hospital is also specialized in the management of chronic pain and the treatment of elderly patients.

As part of the inpatient care, a team of specialists for rheumatology, internal medicine and orthopedics provide complex rheumatologic treatment, which includes specialized physiotherapy, occupational therapy, pain management and psychotherapy, to achieve optimal results through conservative treatment. The naturopathic outpatient clinic uses mind-body medicine techniques: With different methods and procedures, the reciprocal influence of the mind, body and behavior can be used to positively affect health.

Immanuel Krankenhaus Berlin is a teaching hospital of the Charité – Universitätsmedizin Berlin and a cooperation partner of the German Rheumatism Research Center and the German Rheumatology Competence Network.



Ludwig Hoffmann – architect between historicism and modernism

Ludwig Hoffmann (1852–1932) was one of the most sought-after architects in Germany at the turn of the 20th century. Buildings such as the Rudolf Virchow Hospital, the Märkisches Museum and the Stadthaus (old city hall) bear witness to the range of his architectural oeuvre. In 1898 the City of Berlin commissioned Hoffmann, who was then Director of City Planning and Construction, to design and build a new hospital site in Buch. The five hospital and nursing facilities in Berlin-Buch are among his most outstanding creations. The integration of the hospital complexes into the landscape and the functional interaction of architecture and nature are considered to be architectural precursors of later sanatoriums and spa facilities. The “garden city for sick persons” is heritage protected as a valuable garden and building landmark.

Immanuel Krankenhaus
Berlin: Individualized
treatment for rheumatic
patients
Hospital and outpatient
clinic under one roof

Interdisciplinary association Tumor Center Berlin-Buch

The Tumor Center Berlin-Buch is comprised of the Evangelische Lungenklinik Berlin and the Helios Klinikum Berlin-Buch; other hospitals are also associated with the center.

The mission of the Tumor Center Berlin-Buch is to improve early detection, diagnosis, treatment and follow-up of tumor patients according to the current status of research. It promotes the collaboration of all disciplines and institutions of associated hospitals and physicians in medical practic-

es concerned with the care and treatment of cancer patients. Besides offering interdisciplinary tumor conferences on a regular basis, the Tumor Center organizes tumor consultations and offers advanced training in topics related to oncology. In addition, it maintains a clinical cancer registry. Due to the central tumor documentation in the main office of the Tumor Center, complete, high-quality documentation of the courses of all tumor diseases is ensured. The aim is to analyze aspects of the disease course and the cancer treatment and to present these in a transparent manner. Thus, high-quality patient care is ensured and continually improved. Furthermore, the Tumor Center Berlin-Buch supports research and teaching in the field of oncology and the exchange and cooperation with other tumor and oncology centers in Germany.



Excellent Education in the Field of Health

Young researchers find excellent conditions on Campus Berlin-Buch. With graduate programs, access to interdisciplinary research groups and state-of-the-art technology, the Max Delbrück Center for Molecular Medicine, the Charité – Universitätsmedizin Berlin and the Leibniz-Forschungsinstitut für Molekulare Pharmakologie contribute to the education and training of a new generation of scientists. Already since its early days, Campus Berlin-Buch has provided enrichment in science education. Here the Life Science Learning Lab was established in 1999, which offers students the opportunity to conduct experiments on biomed-



cal topics in authentic laboratories. In the meantime the spectrum of the Life Science Learning Lab extends to vocational training and advanced training modules. With the Akademie der Gesundheit Berlin/Brandenburg e.V., Berlin-Buch has a center for life-long learning for the care, therapy and medical technical health professions. It offers flexible transitions from vocational and advanced training to college-accredited study modules. The Buch hospitals train physicians, among others in conjunction with the Medical Faculty of the Charité – Universitätsmedizin Berlin.

Health professions – vocational training and college degree programs

Akademie der Gesundheit

The Akademie der Gesundheit Berlin/Brandenburg e.V. is one of the largest privately-run education and training companies for health care and social services in Germany. It offers comprehensive education and training with degree programs under one roof, with around 2,500 course participants per year. Altogether, the Akademie has more than 1,080 government-

accredited and additional private training places for thirteen professions. These include health care and nursing professions, physical and occupational therapy as well as medical-technical assistant professions in functional diagnostics, radiology and the laboratory, surgical-technical assistance, speech therapy and emergency paramedicine, as well as the midwife profession. At three locations, the Akademie provides vocational and advanced training for more than 33 health care and social institutions in Berlin and Brandenburg. Since 2010 the Akademie der Gesundheit has been running a study center in cooperation with the Steinbeis-Hochschule Berlin and offers the degree programs “Bachelor of Arts in Business Administration” and “Bachelor of Science in Interdisciplinary Health Care” both on a part-time basis and integrated into vocational training.



The Akademie der Gesundheit stands for competence- and future-oriented education

Hands-on science Life Science Learning Lab (Gläsernes Labor)

With more than 15,000 students and teachers participating in the courses every year, the Life Science Learning Lab ranks among the most popular student labs in Germany. In five labs middle and high school students can independently conduct sophisticated experiments in molecular biology under the guidance of scientists from the campus. The range of topics also includes courses in cardiovascular diseases, neurobiology, chemistry, radioactivity and ecology. Since the experiments are closely related to the




Each year, scientists open their research labs to the public during the Long Night of the Sciences

science curriculum, they provide excellent support for science teaching and learning in the schools. In addition, the lectures and advance training modules offered by the Learning Lab enable teachers to integrate current biomedical research findings into their lessons in the classroom. The Learning Lab also offers holiday academies for talented high school students. Furthermore, together with partners the Learning Lab also offers training on a part-time basis for laboratory staff, scientists and entrepreneurs. The Life Science Learning Lab is supported by the campus institutions Max Delbrück Center for Molecular Medicine in the Helmholtz Association (MDC) and the Leibniz-Forschungsinstitut für Molekulare Pharmakologie (FMP) and by various sponsors.

Dr. Ulrich Scheller, CEO at Campus Berlin-Buch GmbH (CBB) [2nd row from top] and Jens Reinwardt, director of the Akademie der Gesundheit Berlin/Brandenburg e.V., [3rd row from top] with visitors of the Life Science Learning Lab and future lab assistants



With five well-equipped labs for school students, the CBB-managed Life Science Learning Lab offers students the opportunity to carry out scientific experiments on topics such as genetics, neurobiology, chemistry or physics. The Akademie der Gesundheit Berlin/Brandenburg e. V. sets trends in the education and training of health professionals.



Buch is growing. With new residential parks on the historic hospital sites and modern living space in renovated buildings, the green district is becoming increasingly attractive. New schools and kindergartens are bringing diversity to Buch. The parks of Buch and the surrounding forests and lakes are among the advantages of the location – just like the rapid connection to the city center.

View into the Ludwig Hoffmann Quartier
© Ludwig Hoffmann Quartier

New Quality of Life in Buch

Living in Buch means living in green surroundings with extensive forests and splendid lakes nestled in the neighboring Barnim Nature Park. And the bustle of central Berlin is just 20 minutes away by commuter train. The large heritage-listed hospital areas designed by the architect Ludwig Hoffmann are characteristic for the district, along with Campus Berlin-Buch, the baroque castle church, the historic estate and the castle park. With its

unique residential parks in the historic hospital and park sites, its diverse offering of modern living space and a growing variety of schools, kindergartens and day care centers, Buch is becoming an increasingly attractive place to live.

The Berlin Senate is supporting the dynamics of the science and health location: 2,500 new apartments shall be constructed here over the long term.



A project of HOWOGE: Under the guidance of the sculptor Rudolf Kaltenbach, school students in Buch create sculptures for their location



Planned new building ensemble in the Ludwig Hoffmann Quartier

Innovative uses for historic buildings Residential neighborhoods with special charm

Of the five large hospital and nursing sites which the Berlin city planner Ludwig Hoffmann designed for Buch at the beginning of the 20th century, today only one is used as a hospital campus. The other heritage-listed garden and building landmarks offer an outstanding quality of life: With the LudwigPark and Allées des Châteaux, unique residential parks have been developed there. The renovation of another complex is planned to be completed by 2022. In the Ludwig Hoffmann Quartier, up to 1,000 apartments are under development. Around 450 apartments in the historic buildings have already been occupied. Two new schools and three new day care centers – all privately managed – have revitalized the 28-hectare Quartier.

Renovated apartment complex: new cityscape – new attitude towards life



Image change in the district Sustainable renovation and focus on education

In Buch, areas with one-family houses border on large apartment complexes which were built in the 1970s. These belong to housing companies, who have extensively modernized their buildings in recent years. However, it is not only the new facades that are giving a boost to the change in image: The housing companies are engaged in promoting a vibrant life in the neighborhood and support various school projects, cultural initiatives and sports in Buch.

The district of Pankow will build an education and integration center with supraregional appeal in the coming years. The library, music school, adult education center and a part of the Life Science Learning Lab will be integrated into a common open house and enliven education, culture and exchange.

Development Sites in Berlin-Buch

Residential parks in historic hospital areas

- Allées des Châteaux
- Ludwig Hoffmann Quartier
- LudwigPark

Ludwig Hoffmann Quartier

- New construction of 190 residential units, 200 to 250 apartments and 75 apartments for seniors

Potential area for residential housing

Education and Integration Center

- New building for the music school, adult education center, municipal library and a part of the Life Science Learning Lab

Residential district development

- New construction of over 1,000 apartments, a school and a day care center

Boarding House

- Construction of an apartment house for young scientists and doctors





Hospital Campus “C. W. Hufeland”

- Helios Klinikum Berlin-Buch: maximum care hospital with more than 1,000 beds
- Evangelische Lungenklinik Berlin, specialized hospital
- Immanuel Krankenhaus Berlin, specialized hospital for rheumatic diseases
- Akademie der Gesundheit Berlin/Brandenburg e. V.

Science and BiotechPark Campus Berlin-Buch

- Max Delbrück Center for Molecular Medicine in the Helmholtz Association (MDC)
- Leibniz-Forschungsinstitut für Molekulare Pharmakologie (FMP)
- Clinical research: Charité – Universitätsmedizin Berlin/ECRC
- Berlin Institute of Health (BIH)
- BiotechPark Berlin-Buch: Innovation and Incubation Center with 31,000 sq. m of floor space and 62 companies

BerlinBioCube

- New building for life science start-ups with 8,000 sq. m of laboratory and office space

Expansion of Campus Berlin-Buch

- Research-related industry and biotechnology companies

Berlin-Buch – Facts & Figures

Research institutions Campus Berlin-Buch

Employees and guest researchers (total)	2,151
thereof:	
Max Delbrück Center for Molecular Medicine (MDC)	1,646
Leibniz-Forschungsinstitut für Molekulare Pharmakologie (FMP)	303
Clinical Research Charité Campus Buch	202

Budget (institutional funding and external grants, total)	€ 192 million
Max Delbrück Center for Molecular Medicine (MDC)	€ 147 million
Leibniz-Forschungsinstitut für Molekulare Pharmakologie (FMP)	€ 29 million
Clinical Research Charité Campus Buch	€ 16 million

BiotechPark Berlin-Buch

Number of companies	62
Employees	800
Annual revenues	€ 220 million
thereof, percentage of grants	3.1 %

Hospitals & care institutions

Employees (total)	3,564
thereof	
Helios Klinikum Berlin-Buch	2,700
Evangelische Lungenklinik Berlin	325
Immanuel Krankenhaus Berlin, Buch location (rheumatic hospital)	89
Care institutions and providers, e.g. Renafan Service Leben	450
Number of patient beds	1,267
Patients per year (inpatient and outpatient)	220,519

Investments in the Berlin-Buch location

€ 1.451 billion

Total investment volume	€ 1.451 billion
thereof	
Infrastructure Campus Berlin-Buch ¹	€ 624 million
HELIOS Klinikum Berlin-Buch ²	€ 336 million
Evangelische Lungenklinik Berlin ³	€ 49 million
Immanuel Krankenhaus Berlin, Buch location (rheumatic hospital) ¹	€ 39 million
LudwigPark ³	€ 45 million
Allées des Châteaux ³	€ 23 million
Widerker Vermögensverwaltung (Schlosspark-Passage) ³	€ 29 million
Ludwig Hoffmann Quartier	€ 152 million
Housing associations:	
HOWOGE ^{3,4} , EWG Pankow Buch ^{3,5} , WBG Wilhelmsruh Buch ^{3,6} , Hau+S ^{3,5}	€ 154 million

Number of inhabitants

16,467

1 primarily from public funding (EU, federal and state); according to Campus Berlin-Buch: total funding since 1992, incl. BIMSB

2 from own resources, since 2001

3 primarily from own resources

4 since 2009

5 since 2006

6 since 2002

As of: January 2019



Architectural masterpieces

The Home for Lung Patients – later known as the Forest House – was the first large project to be planned in Buch. Construction started in 1901 on the site of the former Pheasant Preserve in the Castle Park. Only four years later the hospital began operation.

The Old People's Home, which opened in 1909,

(later known as the Ludwig Hoffmann Hospital) was considered to be the architectural masterpiece of Ludwig Hoffmann. The architect and city planner respectively grouped four houses in country style with mansard roofs around fountain courtyards, in order to avoid a strict "barracks impression". Passages and pergolas reinforced the rural character and the quiet seclusion of the gardens.



Supported by the Senate Department for
Economics, Energy and Public Enterprises
and the District Office of Pankow.