museum für
naturkunde
berlin

Leibniz-Gemeinschaft

MUSEUM FÜR NATURKUNDE 2020

OUR STRATEGY FOR AN INTEGRATED RESEARCH MUSEUM

MISSION

Discovering and describing life and earth – with people, through dialogue.

VISION

As an excellent research museum and innovative communication platform, we want to engage with and influence the scientific and societal discourse about the future of our planet – worldwide.

People love nature, nature gives us pleasure – high visitor numbers in Natural History Museums all over the world bear witness to this simple fact.

At the Museum für Naturkunde Berlin we are discovering and describing life and earth, with people and through dialogue. Our mission, vision, strategy and structure demonstrate that we are a scientific and cultural institution. We are an active partnership organisation, in Berlin, in Germany, in Europe and in 60 countries worldwide. We are a much loved visitor attraction and innovative communication platform – one is seven of our 500,000 visitors actively engages in our educational offers.

Despite having started a comprehensive building program in 2007 much is still to be done. Our largely dilapidated estate presents us with significant challenges as we have to protect and develop our unique and invaluable collections as a global scientific infrastructure and preserve it as a national cultural treasure. At the same time Grand challenges such as protection of biodiversity, dwindling natural resources, climate change and equitable sharing of resources are a call for action - therefore our research is addressing relevant scientific questions. Natural History Museums are well placed to play their part in helping society to address these Grand challenges and to find scientific and societal solutions. Excellent, cutting-edge science, combined with innovative communication reaches broad sections of society, industry and policy, enabling us to encourage people to engage and to act.

Our strategy Museum für Naturkunde 2020 was developed during an eight months bottom-up, museum-wide process that was open to all people working at our museum. We are successfully delivering the strategy since late 2012 and since January 2014 a new structure is in place to support strategy implementation.

We hope that our work and this strategy inspires you to become engaged with the museum and its mission.

With kind regards

Prof. Johannes Vogel, Ph.D.
General Director

THE INTEGRATED RESEARCH MUSEUM

The objectives of an integrated research museum are to produce excellent science, to care for and to develop its collections, and to serve as a bridge between science and society. Accordingly, the aspirations driving our work are and will remain the following:

1 To advance our collection-based research by focusing on fundamental issues in earth and life sciences; also to play our part in finding answers to the great scientific and social problems of our time;

2 To continue developing our collections as part of a global scientific infrastructure, endeavoring to make them attractive to the widest possible range of users and to make the information stored in the collections readily accessible; we aim in this way to fulfill current and future user requirements;

3 To bring the public at large and the economic, industrial and political sectors to engage intensively with science and natural history. It is our aim that people should care deeply about the natural world, proactively defend it, feel qualified to take informed decisions, be eager to learn, and involve themselves actively in science and scientific debates.

Shared responsibility for a successful future

Every organization needs to establish the ground-rules and basic values appropriate to its purposes. In the Museum für Naturkunde this means the institution's strategy, structure and culture.

- **The strategy enables us to meet the challenges implicit in our mission and our vision, and to determine our museum's future.**
- **The Museum's structure ensures effective governance.**
- **The Museum culture provides the framework for the effectiveness and loyalty of all Museum staff.**

All Museum staff deliver the strategy in their respective fields of activity. We are all dedicated to the maintenance and development of the Museum and its culture.

As a globally networked organization the Museum für Naturkunde is a valued partner to science, humanities and cultural studies, other museum professionals, government, business and a range of professional bodies and non-governmental organizations. We cooperate with local, national and international institutions to offer attractive career prospects to scientists, whether established or recently qualified, and members of other professions.

As a partnership organization we will continue to strengthen our position

- **through forming a Leibniz Centre for Nature (working title) together with the Senckenberg Gesellschaft für Naturforschung / Frankfurt,**
- **in Berlin-Brandenburg, through close cooperation with Humboldt and Freie University, other local universities, other research organisations and through the 1) Berlin Brandenburg Institute of Advanced Biodiversity Research (BBIB), 2) the Coordination Platform for Geosciences Berlin-Potsdam (Geo.X) and the 3) Centre for Heritage and Museum Research (CHiMeRa),**
- **in Germany, through closer cooperation and programmatic alignment with other Leibniz Institutes, universities, research institutes, natural history collections and museums,**
- **in Europe, through closer cooperation, leadership and active participation in major interdisciplinary scientific or collection/infrastructure initiatives, such as EUCOLL, CETAF, EU-BON or SYNTHESYS, and**
- **globally, by supporting the development of strategies and program alignment in major natural history museums (Global NHM leaders), collection-based (research) institutes and initiatives to support the delivery of Aichi 2020 targets, SCICOLL, IPBES, and other international treaties and commitments.**

»This is how we do things around here!«
All members of the Museum team share our organizational culture. The Museum für Naturkunde thrives because we feel at home and respected in our Museum, and so work whole-heartedly, productive and efficiently.

We practice mutual respect and esteem: We are respectful and fair to each other, independent of formal structures and hierarchies.

We live togetherness: We all pull together. We work as a team and we uphold the team spirit both in our minds and actions. We are open-minded: We accept creativity and foster it. We talk with each other and listen to each other.

We offer commitment: We contribute our ideas and commit ourselves to the goals of our teams and the entire Museum. We pull our weight and do not leave it to others to make ideas reality.

OUR VALUES

We learn and teach: Continuous personal and professional development, teaching, training and lifelong learning are important to us.

We practice equality: The Museum für Naturkunde is a place where women and men, individuals from all backgrounds, of all ages, and lifestyle, work alongside each other on an equal footing.

We value family life: The Museum encourages a family-friendly working environment for all members of its team.

We work sustainably: We use our resources sparingly, respectfully and purposefully.

Until 2020

In order to implement our values still further, we intend to

- seek new ways enabling members of the Museum team to get to know each other faster and better,
- work actively to improve internal communication,
- integrate non-German-speaking colleagues more effectively,
- give both greater emphasis and more effective support to individual commitment by all team members, and support initiatives aimed at promoting shared activities,
- offer specific training at all levels,
- present clear career advancement prospects governed by transparent performance criteria,
- create opportunities that encourage more female applications for senior posts,
- improve physical access throughout the Museum,
- draw up and implement clear rules regarding the compatibility of work, family and leisure,
- ensure uniformity in the use of corporate design,
- create a functional intranet and
- develop an environmental and sustainability strategy.

RESEARCH AND COLLECTIONS

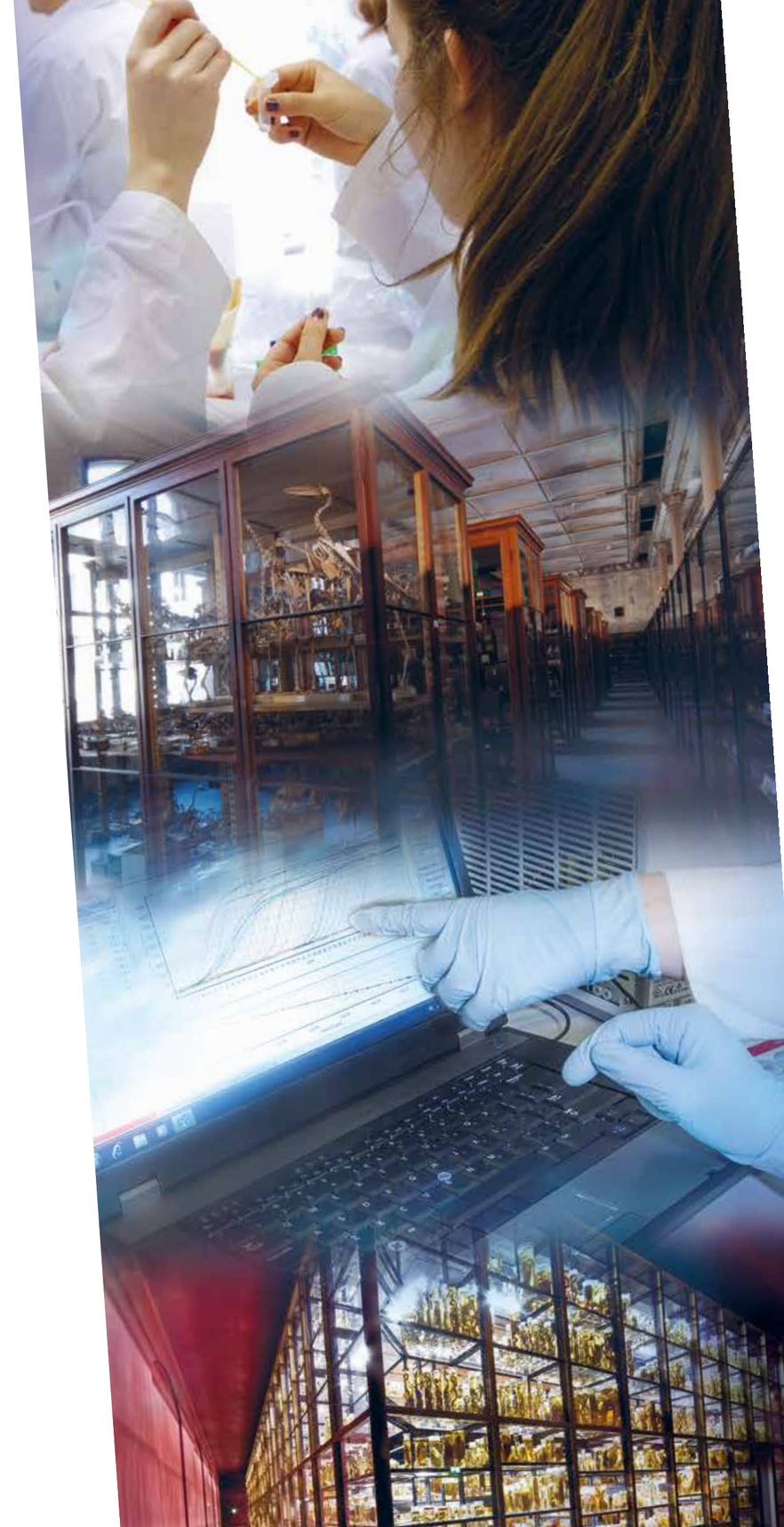
Research, the collection, and the communication of knowledge are the three fundamental parts of the Museum für Naturkunde as an integrated research museum. The collection is a unique cultural asset. It represents a major international scientific infrastructure for our own and wider research activity. Our strong research is interdisciplinary, integrative and supported by wide partnerships and networks. It answers relevant scientific and societal questions.

Research partners in 60 countries

Our goals

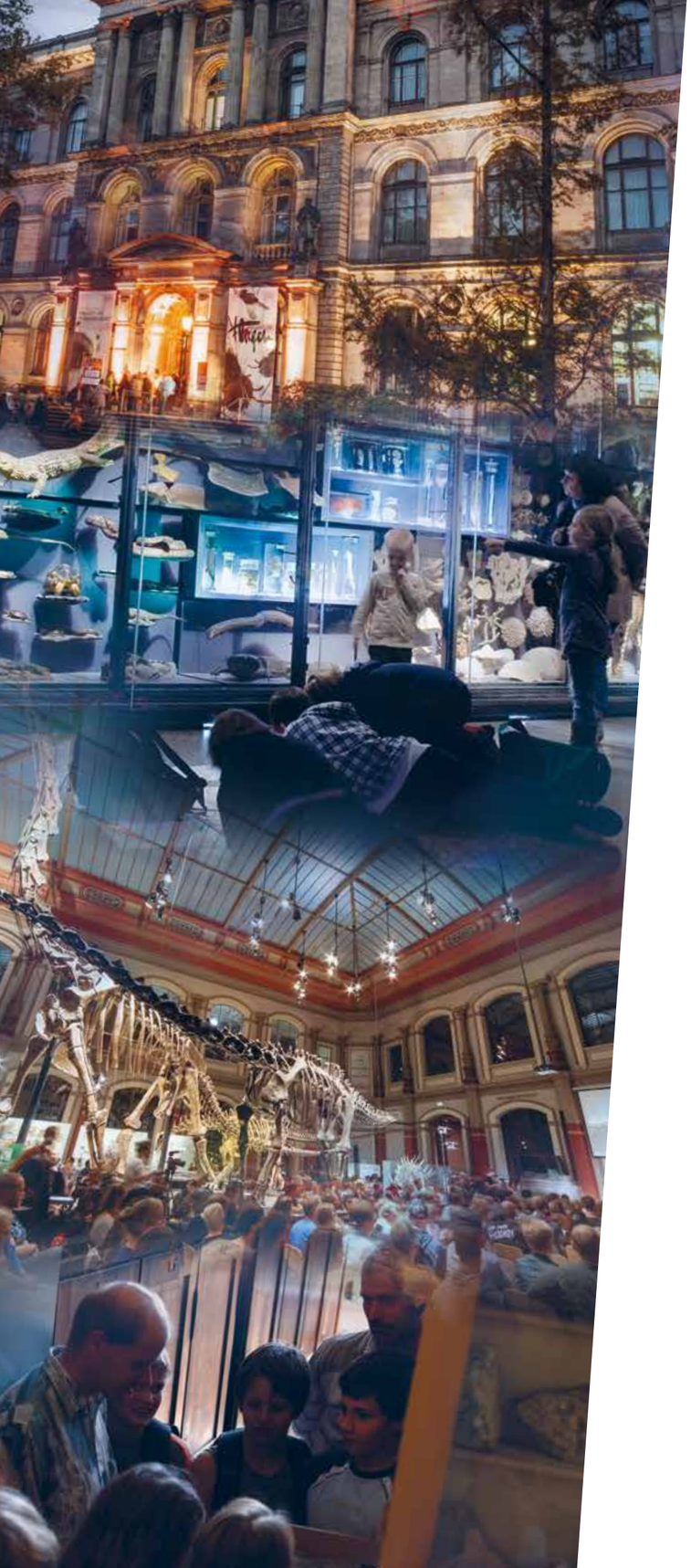
Our science will focus on the following questions:

- How diverse is life on earth and how did it evolve?
- How did the earth and the solar system evolve?
- How can we learn to understand our natural and cultural heritage, and how can scientific knowledge bring people to engage actively in caring for and conserving this heritage and the planet itself?
- In what ways are the earth's system and humankind interdependent?
- How can the infrastructure of our collections and exhibitions be best developed to meet both the present and the future demands of science and society?



Until 2020

- We will explore the evolutionary mechanisms behind biodiversity.
- We will develop and implement methodology for the efficient discovery and monitoring of global biodiversity.
- We will investigate the role of collision processes in the genesis and development of litho- and biospheres.
- We will complete the surveying and recording of impact craters and research the genesis of impact-related deposits.
- We will transfer knowledge from our impact research to the study of other geoprocesses related regional or global disasters.
- We will develop models for the effective dissemination of new knowledge in the natural sciences.
- We will deepen our public engagement with science activities.
- We will proactively bring our scientific knowledge to bear in public decision-making processes.
- We will develop efficient methodology for recording and analyzing biodiversity changes (taxa, ecosystems and timescales).
- We will model changes in biodiversity on the basis of plausible future predictions.
- We will quantify the consequences of natural disasters.
- We will extend the scope of basic research in the field of raw materials exploration.
- We will develop the Museum für Naturkunde to become a centre of excellence for the management and development of (physical and digital) research collections.
- We will strengthen our capacity to develop our collections in relation to future scientific and societal needs.
- We will underpin our own collection management by developing innovative methods and techniques and undertaking cutting edge research into specimen preservation.
- We will develop methods and techniques appropriate to research in the natural sciences.



Until 2020

- We will continue to strengthen our successful model of science communication, incorporate our collection-based research more thoroughly into exhibitions and the Museum's educational programs, and also present it through other media formats.
- We will develop and implement new forms of science communication, dialogue and engagement.
- We will foster collaborative links to other academic institutions in order to play a more substantial role in theoretical and practical teaching and research into public engagement with science and science communication.
- We will focus and strengthen our in-house competencies in (science) policy and business advice and experiment with different methods and modes of stakeholder engagement.
- Together with other national and international research museums and research institutes, we will make our contribution to the Intergovernmental Platform on Biodiversity and Ecosystem services (IPBES) and engage the public with this important development.
- We will create new ways of encouraging people to participate in the many and various types of scientific work being carried on at the Museum.
- We will carry out comparative studies on the effectiveness, challenges and potential of citizen science for blue sky and applied science.
- Through our initiative PAN "Perspektiven auf Natur" (Perspectives on Nature) we will open our science and collections for interdisciplinary collaboration and research with the arts and humanities.
- We will develop evaluation methods and identify instruments that enable us to support change and modifications of knowing, attitudes and, ultimately, actions.
- We will evaluate our public engagement activities in relation to best practice, effectiveness, reach and impact.

MUSEUM AND SOCIETY

We provide best possible access to the natural and cultural heritage, and communicate our research findings to our stakeholders. We aim to translate scientific knowledge appropriately, thus to engender care for our planet and inspire action, and we research the communication processes that this requires. Here at the Museum we respond to urgent scientific and societal questions, and allow participation in scientific processes and insights. We are developing the participative natural history museum and making it a reality.

500,000 visitors per year

Our goals

The Museum seeks to strengthen the dialogue between all Museum team members and society, and to pioneer and extend modes of communication. To this end we are concentrating on:

- Science communication: The Museum has outstanding capability for presenting its research through exhibitions, educational programs and various media formats so as to reach an extraordinarily diverse range of people.
- Policy and business advice: We want strengthen our work with (science) policy makers, business and others. We want to strategically expand our competencies, reach and networks.
- Citizen science: Private individuals and amateur scientists are already involved in many ways in the Museum's research and collection activities. It is our aim to support them in this. We will broaden our cooperation with learned societies, amateur naturalists and aim to engage further groups.
- PAN – our Centre for arts and humanities research: Over and above their scientific significance, the Museum's collections also reflect the cultural and intellectual history of different epochs. They are part of our cultural heritage. We intend to place greater emphasis on this cultural aspect of the collections' importance, by fostering more collaboration and interdisciplinary research in cultural studies, humanities, arts and history of science.
- Effectiveness of public engagement with science: Our aim is to develop the Museum's profile as a center of excellence in applied and theoretical public engagement with science. We want to experiment with different ways to engage the public and to study the effectiveness of different approaches.

GOVERNANCE AND FUNDING

Sound governance and funding structures make it possible to run the Museum efficiently. This relies on

- all Museum staff accepting individual responsibility,
- a clear allocation of responsibilities and delivery,
- efficient staff structures and communications,
- and optimized processes and procedures.

More than 400 staff and volunteers

Our goals

Staff related goals

- Staff development: continued personal and professional training; staff induction procedures; introduction of appraisal and development interviews; performance-related pay.
- Support for training in all job families.
- Equality of opportunity: implementation of the “Beruf und Familie” (Career and Family) program; increasing the proportion of women in senior posts.

More than € 4M external funding p.a.

Funding related goals

- Performance-related allocation of funding: development of performance criteria; developing management tools to monitor (research) performance.
- Funding: Strengthening external funding; development of a long-term fund-raising and marketing strategy.

Organizational goals

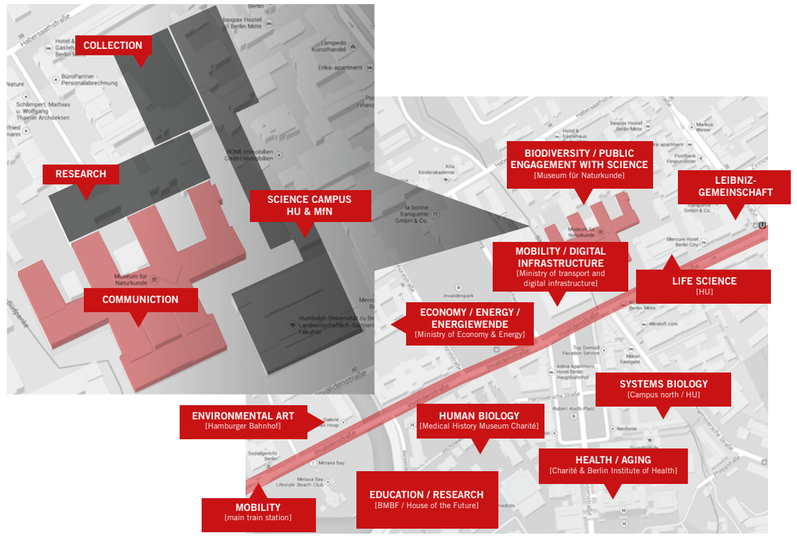
- Clear definition of roles and responsibilities.
- Communication: Development of a transparent communication structure.
- Information systems that meets the needs of scientists: Development of a research database.
- Quality assurance: Implementation of the rules of good scientific practice; development of control mechanisms.

Disaster planning, risk

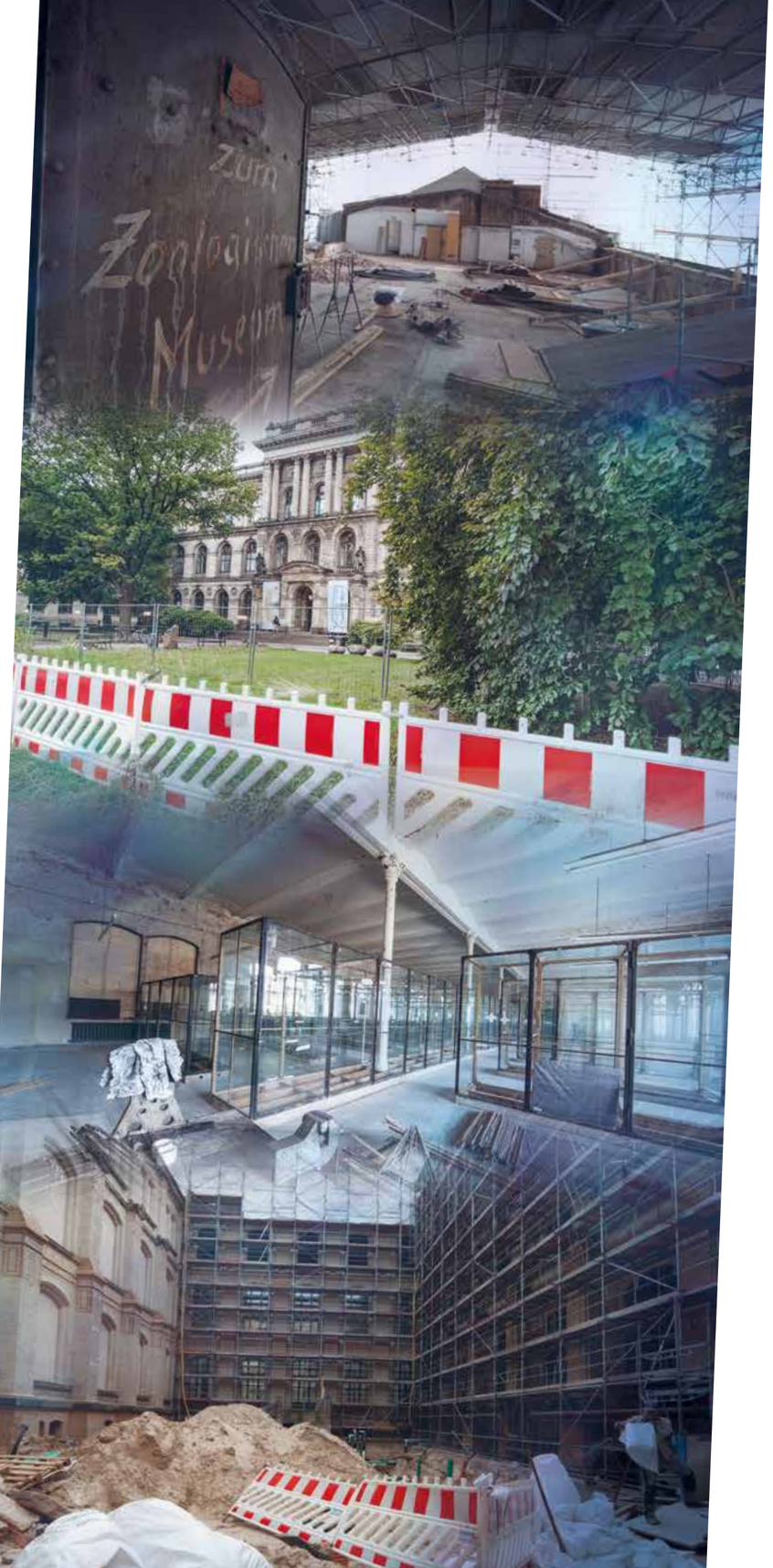
- Disaster plans for our estate, collections and IT.
- Use a risk register to manage the organization and future opportunities.

Bis 2020

- Further development of efficient and fit for purpose organizational structures.
- Introduction of staff appraisals and staff development.
- Development of a reporting system (including a research database).
- Develop a science database system to manage cost and performance.
- Development of a long-term fund-raising and marketing strategy and the
- Compilation of a risk register and its routine use in organizational management and development.



In the Invalidenstrasse area several important science, arts, culture and policy institutions are assembled. Our vision is to create a science and society hub with international reach – with the Museum für Naturkunde as one of its central communication platforms.



Until 2020

- We will analyze and improve the current working practices and infrastructure, and the associated funding requirement.
- We will build up a database recording important information continuously, especially when required for reference purposes.
- We will document all processes and tailor them efficiently to match requirements.
- We will develop a system of process monitoring in order to maintain the desired quality standard and to be able to react flexibly to developments as they occur.
- We will implement such infrastructural changes as are needed in order to achieve our strategic aims.
- We will see the second building phase of the major restoration of the building through to completion, on time and on budget.
- We will develop and start implementing a Museum master plan.

INFRASTRUCTURE AND PROCESSES

We will document and optimize our infrastructure and processes and bring them into line with the organization's strategic goals. All strategically significant processes (key processes) are, as a matter of principle, transparent, defined by clear allocation of responsibilities, standardized, legally sound, effective and time-efficient. Adherence to these fundamental principles ensures that processes develop in a timely and appropriate fashion.

More than 30 million objects – one of the most comprehensive collections worldwide

Our goals

The strategic goals cover our entire infrastructure and working practices.

Infrastructure

- Restoration and building works necessary to safeguard the estate, building fabric and cultural assets, to maintain the collection and to comply with minimum standards.
- Collections, laboratories, workshops and facilities, exhibitions and libraries fulfill the requirements for modern (research) infrastructure.
- Furnishing and spatial planning are user-oriented, optimized and flexible.
- The physical and digital IT structures enable optimal support for all the museums work.
- Processes and infrastructure are sustainable, environmentally friendly and economical in their use of resources.

Working practices

- Important organizational data are regularly stored and secured.
- All administrative processes are service-oriented, efficient, and optimized in relation to the key processes.
- Structures and tools enable efficient and effective project management.
- Routine practices meet professional standards: efficient, integrated, up to date, documented.

The institutional structure of the Museum mirrors our aspirations and objectives, aims to address the challenges ahead and helps us to develop an integrated research museum. We have a directorate and associated administrative structures, as well as two overarching science themes, with two programmes in each theme. The theme “Dynamics of Nature” covers the description and documentation of life on Earth in all its rich facets, evolution, patterns and processes that make life on Earth possible and are the basis for its diversity. It also embraces research into the evolution of planet Earth and the solar system. Its two science programmes are “Evolution and Geoprocesses” and “Collection Development and Biodiversity Discovery”, thus it covers what would be described as ‘classical research’ in a natural history museum. This is where natural science research on the collections - our main research infrastructure - is located.

OUR STRUCTURE

The theme “Society and Nature” with its two programmes “Digital World and Information Science” and “Public Engagement with Science” tries to go beyond what would have been described as classical research in natural history museum. Here, we have created several new research areas, such as 1) information and knowledge management, i.e. research into how knowledge is created and passed on at the Museum, historically as well as with modern technology; 2) public engagement with science, cultural knowledge and biodiversity policy, i.e. studying knowledge creation and knowledge communities, citizen science, the history of natural history and its political significance as well as how best to provide science advice to society, business, government and other stakeholders worldwide. Building networks and developing our capacity in education, outreach, exhibitions and policy are also part of this theme, and thus we are combining cutting-edge practical delivery with innovative social science research.

Science programme 1

EVOLUTION AND GEOPROCESSES

Our mission is researching Life and Earth.

This science programme takes an interdisciplinary approach to studying biological anD geological/paleontological issues with partners around the world. Our collections support this research and, in turn, are enhanced by newly acquired materials. The science programme is divided into four departments. Zoologists, palaeontologists and geoscientists are studying the micro-evolutionary mechanisms of population differentiation and species development (speciation), evolutionary genetics and biodiversity. Our work covers the entire time frame from the birth of our solar system via the present to the modelling of future scenarios. Processes of diversity dynamics are also investigated based on changes of ecosystems in time and space.

The Microevolution department focuses on gradual evolutionary changes within organisms that can lead to the emergence of new forms over extended periods of time. The Evolutionary Morphology department is concerned with the evolution of genetic blue-prints and characteristic complexities. Various methods are used, including modern imaging procedures and different types of digitilization, as well as molecular-biological approaches.

The main role of the Diversity Dynamics department is to investigate processes that change Earth‘s biodiversity and the ecological and evolutionary effects of these changes.
The Global Catastrophes department is concerned with catastrophic events in Earth‘s history, some of which have also contributed to the emergence and/or development of life on Earth.

Science programme 2

COLLECTION DEVELOPMENT AND BIODIVERSITY DISCOVERY

User-based access and research-based collection development.

The Museum für Naturkunde Berlin collections – containing more than 30 million objects – represent a research infrastructure of worldwide importance. They are not only used just for the Museum‘s own research activities, but also by external researchers and many other user groups. Every year hundreds of scientists from all over the world visit the Museum‘s collections to study this remarkable body of reference material. The objects in the collection also represent a unique cultural asset and basis for transferring knowledge in diverse fields. Maintaining this collection, making effective use of it, and developing it for the future presents a major challenge for the science programme ‘Collection Development and Biodiversity Discovery’. To fulfil its existing functions and deal with new tasks as they arise, the science programme is increasingly adopting new approaches to intelligent collection management. It is divided into three departments: Collection Development, Collection Competence Centre, and Biodiversity Discovery.

The Collection Development department is concerned with safeguarding and developing the collections in the best and most comprehensive way possible for the long term. A professional collection management system lies at the heart of this approach, and well-trained staff are the key. The aim of the Collection Competence Centre is to address questions and problems relating to conservation, to combine specific areas of expertise in a knowledge pool, and to design a programme of further training and development.The role of the Biodiversity Discovery department is to record and describe life on Earth effectively and efficiently.

Science Programme 3

DIGITAL WORLD AND INFORMATION SCIENCE

Digitization is a new opportunity for sharing ideas and interconnected thinking.

Digitization refers to more than digital replica of physical objects or natively digital objects (images, sound, models, datasets, etc.). New knowledge processes emerge where abstract concepts such as animal and plant species and their characteristics are studied and managed in global digitized knowledge networks. With the semantic web, a new scientific language based on the web addresses of objects and concepts is emerging – a language which needs a networked, digital infrastructure. Digitization is not technology. It is a new opportunity for sharing ideas and interconnected thinking!

The new science programme ‘Digital World and Information Science’ at the Museum für Naturkunde Berlin combines the museum’s library, information and communication technology, digitization research, and biodiversity Informatics. It researches processes and methods in object digitization, information networks, data analysis, and data publication, and works in partnership with other science programmes and external partners to develop and establish innovative approaches to research, data analysis, and digital collaboration.

Situated at the interface between research and science communication, the science program is committed to supply societal discourse with necessary scientific information about natural resource and biodiversity conservation and sustainable use. It uses innovative approaches and methods of the ‘Digital World’ to help the Museum fulfil its vision of engaging and influencing the scientific and societal discourse about the future of our planet.

Science Programme 4

PUBLIC ENGAGEMENT WITH SCIENCE

Participation with a research museum.

Communicating complex scientific findings such as the availability of raw materials, the evolutionary significance of diseases, or the effects of land use change on biodiversity has long been at the fore-front of this science programme and remains its central objective. But it is becoming increasingly important to understand scientific communication as a dialogue, and to question and adapt our assumptions and patterns of communication. This has prompted us to examine questions such as how can we communicate with different age groups in a sustainable manner? What role can digital media play? The Museum für Naturkunde Berlin‘s science programme ‘Public Engagement with Science’ addresses all these concerns, including the historical perspective.

A relatively new branch of research is theory and practice of interaction with other social partners – as evidenced by the relatively high proportion of third-party funded projects. One example is the project ‘Art/Nature. Artistic interventions at the Museum für Naturkunde Berlin’.

The Museum für Naturkunde Berlin also plays a leading role in facilitating dialogue with political and societal players. Together with the Helmholtz Centre for Environmental Research (UFZ), the museum coordinates the development of a national Citizen Science Strategy (GEWISS) and runs the network forum Biodiversity Research Germany (NeFo). This brings together not only different disciplines of biodiversity research, it also supports the sharing of information with political players on the national, European, and international stage, and evaluates this process.

OUR 5 SCIENTIFIC QUESTIONS

1. How diverse is life on earth and how did it evolve?

2. How did the earth and the solar system evolve?

3. How can we learn to understand our natural and cultural heritage, and how can scientific knowledge bring people to engage actively in caring for and conserving this heritage and the planet itself?

4. In what ways are the earth's system and humankind interdependent?

5. How can the infrastructure of our collections and exhibitions be best developed to meet both the present and the future demands of science and society?