

EXHIBIT

A beacon for conservation

THE RHINOCEROS PAGODA AT BERLIN ZOO IS A SUPERB SHOWCASE FOR SUCCESSFUL SPECIES CONSERVATION AND ITS WIDE-REACHING BENEFITS

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The Rhinoceros Pagoda was ceremoniously opened at Berlin Zoo (Germany) in June 2023, after two years of construction. At the heart of the new Rhinoceros Pagoda lies one of the greatest success stories in species conservation ever seen on the Asian continent: the recovery of the greater one-horned rhinoceros (*Rhinoceros unicornis*) back from near extinction. There, close to the zoo entrance at the Lion Gate, visitors can be captivated by bathing rhinos, Visayan warty pigs (*Sus cebifrons*) and lowland tapirs (*Tapirus terrestris*) while learning more about species conservation in Berlin and across the world.

A NEW HIGHLIGHT IN BERLIN CITY WEST

In an area of approximately 14,000 square metres, a natural swamp landscape with numerous bathing pools, waterfalls, showers and mud pits resembling the natural habitat of the animals has been created at Berlin Zoo. The facility, which measures more than 2,000 square metres, meets the high standards of modern animal husbandry. The greater one-horned rhinoceros moves on soft, marshy surfaces in its natural habitat and requires special flooring for its sensitive feet. Therefore, particular attention was paid to using

exceptionally soft material for the indoor and outdoor areas. Since these rhinos spend a lot of time in the water, they have access to a natural rhino wellness landscape covering around 5,000 square metres, including five bathing pools, three mud pits and showers for their enjoyment, skin care and cooling. The other inhabitants of the shared enclosure also provide variety for all the senses: seven Visayan warty pigs share their home with the four rhinos. The pigs can retreat to their exclusive pig lounge at any time if the interactions with the heavyweight colossi become too intense. The pampering programme for pachyderms is rounded off with deadwood trees and logs that can be used as independent massage stations.

ARCHITECTURAL VIEW

We are particularly proud of the result: the Rhinoceros Pagoda is an architecturally complex and modern homage to the historical buildings of Berlin Zoo. In the new mixed-species facility, architecture, landscape architecture and education are holistically coordinated. We invite guests to become part of the animals' recreated habitat so that the spatial and emotional proximity to the animals conveys the educative

messages about species conservation. The successful implementation of this challenging project, both in planning and construction, is based on a co-creative, collaborative partnership between dan pearlman Experience Architecture and the zoo. 'The Rhinoceros Pagoda is the tallest building in Berlin Zoo, visible as a new landmark for the zoo beyond its borders, due to the 25-metre-high tower at the centre of the facility,' explains Frank Bruckmann, Chairman of the Supervisory Board of Berlin Zoo. 'Our guests have the unique opportunity to observe the rhinos up close and learn more about their way of life and the challenges they face.' Inside the Pagoda, guests can embark on a journey into the homeland of the fascinating greater one-horned rhinos, learn more about their habitat in northeastern India and engage with the big questions of the future – What does the loss of biodiversity mean? What rays of hope are there, and how can I contribute to species conservation myself?

In addition to being a beautiful architectural novelty and a lovely home for the animals, the facility also demonstrates that all three species in the Pagoda are part of the EAZA Ex situ Programmes (EEPs) and thus have a very important role to play.



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COMMITMENT TO *EX SITU* AND *IN SITU* SPECIES CONSERVATION

'The opening of the Rhinoceros Pagoda at Berlin Zoo provides valuable holding space,' explains Katharina Hartmann, coordinator of species conservation at Berlin Zoo. 'The carrying capacity for this species within the EAZA region has been reached, which makes it important that new enclosures are built. Providing the space to house not one but several males within one institution allows the EEP to increase the overall population size gradually and to realise its direct conservation role. The greater one-horned rhinoceros is an example of a species that has returned from the brink of extinction in the wild despite poaching and thanks to global conservation efforts. The EEP for this species will provide EAZA Members with tools to educate visitors about the impact of poaching and wildlife trafficking of rhino parts and increase appreciation for this species.'

Indeed, at the beginning of the 20th century, the greater one-horned rhinoceros was on the verge of extinction, with fewer than 200 animals remaining in its natural habitat. However, thanks to extraordinary conservation measures, not only was this species saved,

BERLIN WORLD WILD

Berlin Zoo and Tierpark Berlin are part of a global network and collaborate with other non-profit organisations and initiatives in the field of biodiversity conservation. Berlin Zoo and Tierpark's conservation programme Berlin World Wild supports species conservation projects around the world and provides emergency funding where necessary.

but also an entire ecosystem was preserved. The greater one-horned rhinoceros is thus a significant example of an 'umbrella species', a charismatic species whose conservation benefits many other, lesser-known species of animals and plants. After the rhinos were protected and national parks were established as sanctuaries, the populations gradually recovered.

'The Rhinoceros Pagoda is a significant step in our mission to advance species conservation and raise awareness of the alarming loss of biodiversity, using the example of greater one-horned rhinos,' explains Andreas Knieriem, Director of Berlin Zoo and Tierpark. 'In Berlin Zoo, we create a safe environment for the animals and their offspring. At the same time, we want to promote understanding of the threats they face and foster a willingness to protect these and other endangered species.' To this end, the zoo is gradually expanding its commitment

to the conservation of threatened species in their natural habitats. Donations collected at Berlin Zoo are being directed to the species conservation programme of the Zoological Gardens Berlin World Wild, benefiting rhino conservation in India, among other initiatives.

'We are proud of the success story of the rhinos. Thanks to the proactive measures taken by the government of Assam (India), not a single rhino was poached in Assam last year,' explains Bibhab Talukdar, IUCN rhino expert and CEO of the nature conservation organisation Aaranyak. Aaranyak has complemented and supported the proactive measures of the government authorities in Assam through their strong on-ground presence. 'Only with reliable partners like Berlin Zoo can we continue to support the government authorities in securing the future of rhinos in India,' adds Bibhab. 'We are very grateful for our allies in species conservation.'



New tools for animal welfare

HOW TWO EAZA MEMBERS TOOK A COLLABORATIVE AND NUMERICAL APPROACH TO WELFARE ASSESSMENT AND RESEARCH IN ZOOS

Constance Wagner, Assistant Curator and Welfare Manager, Brice Lefaux, Director, and Benoît Quintard, Deputy Director, all Mulhouse Zoo; Amélie Romain, Director, Akongo

The development of welfare assessment tools enables zoos and aquariums to monitor and adjust institutional practices, to answer visitors' questions about the conditions in which animals are kept and to improve working conditions and staff commitment. It is also used to answer the legal obligations to assess animal welfare in global or regional associations such as WAZA, EAZA and others.

Over the years, welfare assessment methods have been implemented to answer questions already raised and to develop institutional practices so that zoos and aquariums can achieve their animal welfare objectives.

A CROSS-DISCIPLINARY COMMITMENT

An animal welfare charter was established in 2020 at Mulhouse Zoo (France), inspired by the Five Domains Model of animal welfare (Mellor et Beausoleil, 2015) and the WAZA welfare strategy. As scientific monitoring is sometimes separated from the day-to-day work of the teams, this charter was implemented by involving all the different professions (e.g. keepers, vets, technical staff, curators, etc.) in a single team. For each situation, questions are asked about individual animal welfare and decisions taken accordingly. Reviewing the situation for each species and questioning practices in the zoo is the first step of the assessment protocol.

NEW TOOLS AND NEW PARTNERS

After identifying the priorities, Mulhouse Zoo worked with Akongo, a research company specialising in zoo animal welfare, to develop a tool for assessing and monitoring animal welfare.

The protocol used is based on the Welfare Quality® assessment (Blokhuis et al., 2008), transposed to wildlife species. The data is collected through observations and questionnaires carried out for every individual. This questionnaire includes around 100 questions related to four areas: environment, nutrition, health and behaviour. The observation sessions use detailed ethograms (i.e. a list of possible behaviours of a species) and enable the observer to objectively quantify the animal's behaviour in its daily life.

One of the key components of the tool is the use of a mobile application where keepers can fill out the questionnaires and observations specific to each species. The app is favoured because it is very practical for observers, who always have their mobile phone with them, and makes it easier to analyse the data collected. Collaboration with external experts is beneficial due to their expertise, but also because it saves time in analysing and interpreting data. These evaluations also highlight the good practices already put in place by teams and help to maintain them. Moreover, this collaboration allows us to play an active role in animal welfare research.

The mobile application has been used, for instance, to monitor social interactions, the effects of a new enclosure, a change of diet, a change in the frequency of food distribution, and other habits and practices.

PUTTING RESEARCH INTO ACTION

In 2023, Mulhouse Zoo and Akongo co-developed welfare assessment questionnaires and ethograms specific to two poorly documented species: Madagascar tree boas (*Sanzinia madagascariensis*) and tomato frogs

(*Dyscophus antongolii*). Thanks to this collaboration, all the zoos working with Akongo now have access to these resources. The project has also been the subject of a poster and a presentation at the EAZA Reptile TAG meeting at the EAZA Annual Conference 2023 for the benefit of all Members.

The collaboration between Mulhouse Zoo and Akongo is an interesting example of how zoos can work together with a research company to improve animal welfare. The new assessments that were developed through this collaboration are already making a positive difference in the lives of the zoo's animals.



Would you like to help with animal welfare research? Please scan the QR code and answer a few questions in this two-minute questionnaire about your experience with animal welfare during introductions.

REFERENCES

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