

Project Details

Application Number	SSD-17483577
Assessment Type	State Significant Development
Development Type	Museum, Gardens & Zoos
Local Government Areas	Mosman Municipality
Exhibition Start	30/07/2021
Exhibition End	26/08/2021

[View project on map](#)



Contact Planner

Lucinda Craig

 [0295856027](tel:0295856027)

THE TARONGA ZOO – New reptilian conservation centre at Taronga Zoo

❖ *Comments from the Mosman Parks and Bushland NGO group.*

More development at the Zoo! How much more can the site hold?

There has been a huge amount of development at the zoo in recent years - an eco-resort, an education centre, a Tiger Trek and an African Savannah. An Upper Australia Precinct has also been approved.

The latest proposal is for a brand new Reptile and Amphibian Conservation Centre to replace the old Reptile World, the Serpentaria. That spot is needed for another development, a new Wildlife Hospital and Nutrition Centre, which will go on exhibition soon. We can't comment with authority on the need for a hospital, but it seems very likely given our environmental predicament!

We can't comment on the adequacy of the current reptile accommodation either, or the need for an upgrade, but the zoo's conservation of reptiles and amphibians has been a primary and successful focus.

The two developments, the hospital and reptile centre, will cost \$62 million, of which the new reptile centre will cost \$13.3 million. The state government is contributing \$40 to the cost in an effort to boost the economy after Covid.

Mosman Parks & Bushland admires the conservation work of the zoo. Conservation, education, and research are vitally important in this age of climate change and loss of habitat. Saving the Bellingen turtles and the attempt to teach the male Regent honeyeater its song have been particularly poignant recent tales from the wild.

The Zoo takes its education mission very seriously with all ages and stages catered for.

Demonstrations and talks are excellent, and wonderful on-line work has been done for children during Covid.

The zoo's expenses must be huge - animal care, research, education and upgrades all have to be paid for, but are light displays, concerts and parties what animals need?

overdevelopment.

Taronga's proposal for a Reptile and Amphibian Conservation Centre, which is on public exhibition until August 26, includes an exhibit and animal care facility.

The project will replace the zoo's Reptile World, known as the Serpentaria, which has "reached the end of its useful life".

Taronga chief executive Cameron Kerr said the new facility would provide a "modern experience" for guests and the latest, best-practice standards for animal care and welfare.

"It will provide critical breeding space to support zoo-based conservation programs to ensure important species, such as corroboree frogs, are protected for decades," he said.

Mr Kerr said the reptile centre would sit below the existing tree canopy and not affect views of the zoo from Sydney Harbour.

A state significant development, the reptile centre is the latest building project at the zoo, following the Tiger Trek and African Savannah wildlife precincts, an education centre and eco-resort, which Mr Kerr said was designed to ensure "vital income streams to fund our increasingly ambitious conservation work".

Kate Eccles, president of the Mosman Parks and Bushland Association, said there had been a "massive amount" of development at the zoo, which had become "a much less attractive venue - too many structures, too much concrete".

New buildings had also affected the view of the zoo from the harbour, Ms





pressure to generate money because governments were not prepared to provide adequate funding.

"The expenses of animal care, research and education must be huge, but there must be a way of getting around this without Disneyfying it," she said. "Upgrades lean more to the human animal. Play areas for children seem to have become as important as animal habitat."

Mr Kerr said he was proud of Taronga and the modern zoo it had become, the experiences offered to guests "and the role we play as the first responders and the last line of defence to help save wildlife".

Linda Bergin, founding president of the Headland Preservation Group and advocate for Sydney's heritage parklands, said Taronga needed to

there are buildings and fewer trees."

She praised the zoo for its conservation, research and indigenous program: "The education role is also taken seriously. Sometimes this is at an

A giraffe at Taronga; and an artist's impression of the planned Reptile and

THE RESPONSE to the above, plus research of the Urbis Document plus Toronto ZOO comparison :

1. At first impressions it lacks “an integrated Green Infrastructure feel” to the concept.
2. The critical breeding space needed to support zoo-based conservation programs to ensure important species such as Corroboree Frogs, are protected for decades could be done off-site and a “feature that involves kids and adults – to participate- considered.
3. In the period before 1970 the Taronga Zoo had a “ZOO FARM” within the Northern Beaches of Sydney. Within the Zoo Farm they breed “special white fur koalas”.
4. The amount of money allocated to threatened species may be “lacking” so “reviewing the Green Infrastructure funding sources” may find a “Critical missing component” that helps.
5. This can consider “The vital income streams to fund the increasingly ambitious conservation work” .
6. The TORONTO ZOO identified a significant decline of Threatened Species. For example, two-thirds of North America’s bird species risk extinction due to climate change, including approximately 50 species native to Canada. A 2017 study by the World Wildlife Fund Canada reported that about one-half of our country’s vertebrate species have declined since 1970, at an average rate of 83% decline.
7. By applying the RMIT UNIVERSITY Centre for Urban Research – Project – Onsets – not bio-diversity Off-sets the “Taronga Income Streams needed the fund the Vital Bio-diversity Conservation works” could be funded in a multiple ways ?
8. The overall “Architectural Concept” seems to LACK a GOOD BIO-PHILIC solution, using a vertical ship-lap detail, to prove its “natural looks”. (But it could be Brown Concrete? To ensure it is Fire-safe)
9. The wood panelling look on the bottom level could be replaced with Sandstone Cladding ?
10. Perhaps a “Green Roof overhead” of flowering Native Plants can “increase the bushland of Taronga Zoo”?
11. or just increase the space for flowering Australian Native Plants – including Kangaroo Paws and habitat for bees and butterflies.(There is a good Butterfly Sanctuary in Kuranda, near Cairns, Queensland).
12. The Historical Bradley Sisters are famous for there “Bush Regeneration methods” (so referring to it and then re-adapting the Planned Upgrade, may give the project a “Greater Long-term Heritage Value”).

provide adequate funding.

“The expenses of animal care, research and education must be huge, but there must be a way of getting around this without Disneyfying it,” she said. “Upgrades lean more to the human animal. Play areas for children seem to have become as important as animal habitat.”

Mr Kerr said he was proud of Taronga and the modern zoo it had become, the experiences offered to guests “and the role we play as the first responders and the last line of defence to help save wildlife”.

13. This cost in Ecosystem Services and Research and education must be huge, but there must be a way of “Funding the Project” rather Disney Theme-Park (That was funded by a National TV show, that attracted large visit numbers to the Theme Park, then later Disney was an international cartoon film and film Studio).
14. The Toronto Zoo has looked at ways to increase its income Streams, and organised a campaign to “Feed the Animals” when car-parking revenue was reduced”. The Greater Toronto Community donated lots of money and also other parts of Canada. It was a successful campaign.
15. The RMIT “onsets” project may find an alternative “Green Infrastructure Funding Model”?

The Proposal :

New reptilian conservation centre at Taronga Zoo

16. 3 Aug 2021



17.

1/3

18. The reptile and amphibian conservation centre at Taronga Zoo by DWP.
19. A new reptile and amphibian conservation centre will be built at Taronga Zoo in Sydney to replace the existing Reptile World exhibit.
20. Designed by DWP (Design Worldwide Partnership) with landscape architecture by Context Landscape Architecture, the new project will deliver a “world-class” reptile and amphibian exhibition and animal care facility. Taronga Zoo says it will increase its capability to respond to wildlife emergencies, save endangered species, educate students and visitors and support wildlife volunteers.
21. DWP’s design will see the building nestled into the site to lessen the overall bulk and scale of the built form. The three levels cascade down the steeply sloping site, with a green wall screen structure on the southern elevation working to conceal the building.
22. But it is unclear how to “feature amphibian animals like Climbing fish, and Platypus fit within the proposed display, on 2 levels? The Sydney Aquarium uses a “VISUAL TUBE” to walk thru the underwater space of the Fish Tank.
23. So an “enlarged space / area” is conceptually suggested by excavating 1 level down.



- 24.
25. The reptile and amphibian conservation centre at Taronga Zoo by DWP.
26. The idea of the exhibition space, on the levels one and two, is to take guests on a one-way journey through the landscape and building, “representing a reptile meandering and morphing through its natural environment.” Level one contains the majority of the animal exhibits and is accessible by guests from the at-grade pedestrian footpath to the east of the site. Level two contains four animal exhibits, and is accessed via a ramp from the level below, running

along the southern facade. Guests exit the building at this level onto the top footpath to the north.

27. Throughout the journey, a series of break-out spaces encourage guest engagement with interpretive and educational elements and also providing opportunities for rest and relief.
28. The ground floor is accessible from the bottom footpath from the south and is for staff use and access only.
29. Taronga Zoo has been working on a number of new exhibits in recent years, including the new the Upper Australia exhibit designed by Lahznimmo Architects with landscape architecture practice Spackman, Mossop and Michaels, which was approved [earlier in 2021](#).
URBIS Report says :

6.3. BIODIVERSITY

The zoo contains significant natural biodiversity and provides habitat for native flora and fauna. Where possible, existing vegetation is being retained and integrated into the landscape design of the proposal. Some vegetation removal and impacts are expected as a result of the proposal. The proposal includes the removal of some of the existing vegetation on the site and substantial alterations to the site's landscaping to allow for equitable access to the precinct. Existing significant vegetation will largely be retained and integrated into the overall landscape design for the site.

The EIS will include a comprehensive arboricultural and biodiversity review of the existing vegetation and habitat on the site and identify all vegetation proposed for removal and retention as part of the proposal. An assessment of the site's biodiversity values and likely impacts of the proposal will be undertaken to inform the EIS for the proposal.

6.4. BUILT ENVIRONMENT

The submitted concept plans prepared by DWP are enclosed in **Appendix C** provides a preliminary indication of the proposed built form which will nestle into the topography of the land.

The RACC is located within the middle of the Zoo, some distance away from any residential properties. The site has limited visibility from the public domain, the foreshore or Sydney Harbour due to existing high tree coverage.

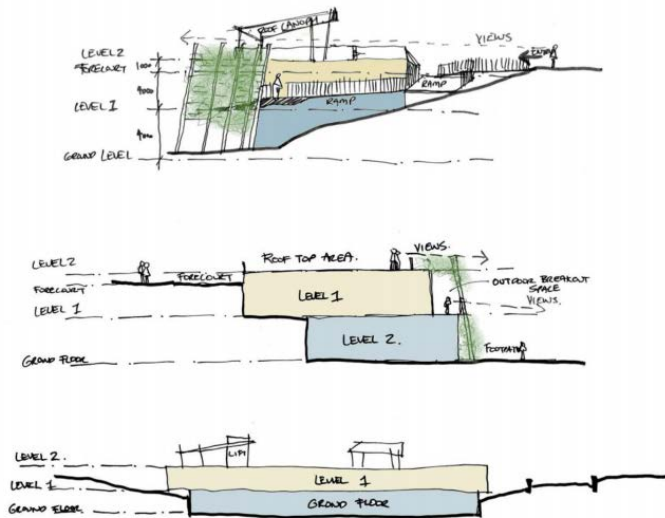
The EIS will address the height, bulk and scale of the proposed development within the context of the locality. The EIS will also address the design quality with specific consideration of the use of colours, materials, finishes and landscaping. A landscape plan will be submitted with the EIS package to proposed landscape works associated with the proposal.

6.7. SOCIAL

The state-of-the art RACC facility will ensure that Taronga Zoo can continue to provide world class animal welfare and education programs for both domestic and international visitors. The proposed works will result in a new and improved reptile exhibit at the Zoo that the public will be able to enjoy. Overall, the project will improve the visitor experience with superior engagement between visitors and animals as well as innovation in animal welfare.

The RACC project has been partially funded as part of the NSW 2021-22 budget to ensure that NSW's tourism industry can continue to recover from COVID-19. The project will deliver genuine economic benefits in these challenging times, particularly in creating full-time jobs during construction, and will sustain direct and indirect jobs during its ongoing operation.

Figure 6 – Initial massing sketches



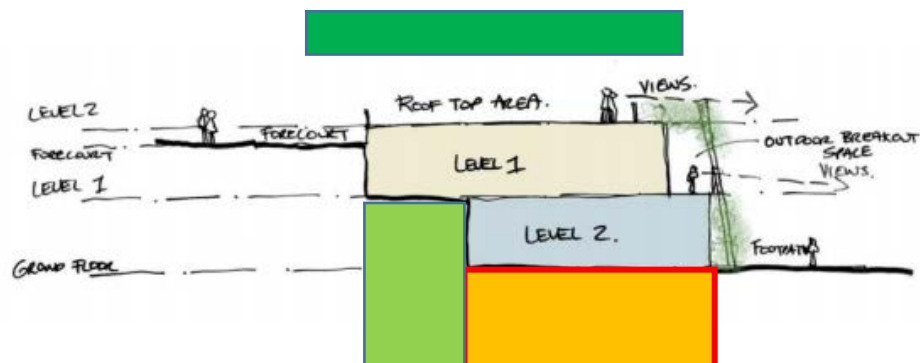
Source: DWP

New reptilian conservation centre at Taronga Zoo – alternative.

This an Alternative Proposal that increases the capacity to do “Conservation workshop work” and Exhibition space for a variety of amphibian animals.

There is an “Optional item” to refine the Screen wall “Green wall” to allow more “vegetation” but also more “Viewing port-holes” and a roof top viewing space “native plants roof garden”.

The additional “ option of a butterfly aviary can use a see-thru mesh, that was used years ago with the designer bird aviary space.



- ❖ This is a “Quick Sketch “ of an alternative preliminary concept. It could have a vegetated “Green Roof” with potential Views. A detail design review can consider “increasing the “Human Space Needs” (Out-door Break-out Space ?).
- ❖ The “YELLOW rectangle” conceptually “ excavate in Sandstone Hillside” .

- ❖ So using the “Burley Griffin Method” the excavated sandstone is used in the construction project.
- ❖ The ROOF top can have a “World Class Native Plant Garden” ???
- ❖ The “access thru the internal exhibition spaces could provide a “Disability Capable Access pathway” from level 2 to level 1 to the proposed higher “vegetated Green Roof.
- ❖ The “additional light green area” can increase the “local Sandstone Source” and the capacity of the exhibition spaces and “workspaces”) ?

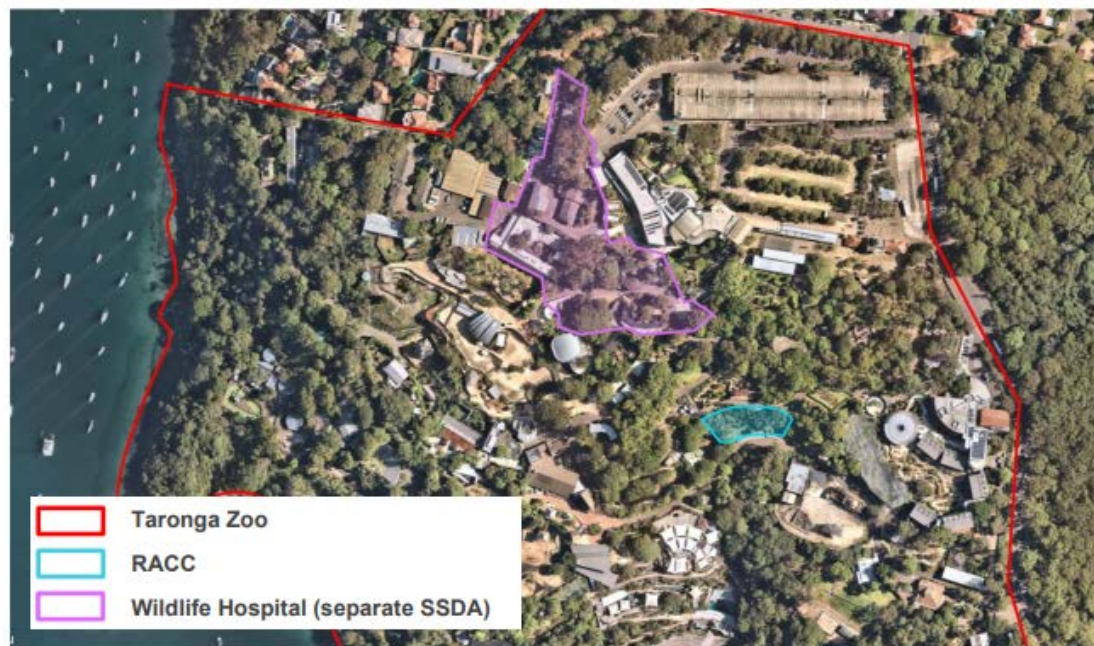
2.2.3. Taronga Wildlife Hospital

A separate SSDA is currently in the preliminary design phase for the construction of the Taronga Wildlife Hospital, Sydney. The project will include a new Wildlife Hospital and Nutrition Centre to replace existing facilities thereby enabling Taronga to respond to an emerging wildlife crisis and provide new experiences to Taronga Zoo's guests.

The location of the proposed Wildlife Hospital will result in the demolition of existing reptile facility. Two separate SSDAs are being sought by the Zoo to ensure that the assessment and construction of the works can be undertaken independently to assist with animal relocations between the old and new reptile facilities.

The EIS will incorporate cumulative impacts of both SSDAs to ensure that construction and operation of both projects will not have any substantial impacts on the zoo and surrounding properties.

Figure 5 – Map of Proposed Works



APPENDIX :: TORONTO ZOO CANADA

1. **The Toronto Zoo Wildlife Conservancy** was established in 2019 to secure increased financial resources and support for the wildlife conservation work being done by the Toronto Zoo. Extinction is forever, and the Zoo's work in fighting extinction—through research, public engagement and education, breeding and reintroduction programs – is vital to wildlife, to us, and to our world.

The global rate of extinction of animal and plant life is now estimated at nearly 1,000 times the natural rate. It is critical that zoos, aquariums, and conservation organizations work together to educate

the public and take actions to stabilize, then reverse, this alarming trend. The extent to which humans are affecting wildlife has never been greater; according to the 2019 United Nations report, more than one million species are threatened with extinction due to human impact. For example, two-thirds of North America's bird species risk extinction due to climate change, including approximately 50 species native to Canada. A 2017 study by the World Wildlife Fund Canada reported that about one-half of our country's vertebrate species have declined since 1970, at an average rate of 83% decline.

2. This ZOO is rated as a top zoo World Wide. The internet search finds the Australia Zoo in Queensland, and San Diego Zoo and Toronto Zoo in the list. The Danish Zoos are featured below in the "Re-designs by BIG group" .

3. Thank You to our Zoo Food for Life Donors



*A special thank you to the thousands of donors who gave their support to our **Zoo Food for Life** campaign. Donations from our supporters in the Greater Toronto Area and throughout Canada were overwhelming and we have also received support from around the world. Your outpouring of support of the Zoo and its animals has been genuinely overwhelming!*

People also found many creative ways to support us. Many restaurants, wholesale food suppliers and others with food products reached out. Contractors waived invoices. Schoolchildren donated out of their piggy banks, or put out a video on YouTube expressing their support, and even one who made her own "stuffie" zoo on her front lawn as a fundraiser! Thank you most sincerely to all.

Due to the high number of gifts we are still processing donations, but it's already clear that we have raised enough to offset the lost parking revenues. In fact, generous donors gave over \$500,000 to our campaign – enough to cover 6 months of food costs! This gives us assurance that the animals will continue to receive top quality care through the closure and as we resume operations. Thank you again!

*While the Zoo Food for Life campaign has been successfully concluded, there are still conservation programs that need financial support, particularly in the endangered species breeding and release programs. For those interested in continuing their support for the many animal nutrition and wildlife conservation programs at the Toronto Zoo, please visit our **Ways to Give** page.*

4. Toronto Zoo and the Toronto Zoo Wildlife Conservancy are proud to be the recipient of an approximate \$380,000.00 grant through the Government of Canada's Climate Action and Awareness Fund (CAAF). The grant will support the Zoo's new Climate Action Learning and Leadership Project – the CALL – that was created to support and engage youth from underrepresented communities to take action to combat climate change. In addition, this initiative will provide new Canadian youth with the knowledge and skills to create their own climate change call to action in their neighborhoods and wider networks and raise awareness

of the opportunities to find their way in the career fields of climate change and conservation science.

"I am inspired by the initiatives brought forward by Canadians from coast to coast to coast. All across Ontario, local groups like the Toronto Zoo are engaging in meaningful climate action that supports Canada's goal of achieving net-zero emissions by 2050. Together we are building a cleaner, healthier future for our children and grandchildren," said The Honourable Jonathan Wilkinson, Minister of Environment and Climate Change.

APPENDIX :: BIG design a ZOO in DENMARK

BIG proposes cage-free "Zootopia" redesign for iconic Danish zoo

By Bustler Editors|

Tuesday, Aug 5, 2014



Image courtesy of BIG

BIG brings out a rather "wild" concept in Zootopia, a commission they received from the iconic Givskud Zoo in Denmark. The proposal includes a spacious cage-free zoo landscape for the animals to roam in, which is divided into three zones

titled "Asia", "Africa", and "America". Human visitors can stay out of the animals' plain sight by observing and ogling at them in structures integrated as much as possible into the landscape.

On one hand, a manmade zoo can never fully replace the animals' true natural habitat, no matter how spacious or meticulously replicated. But let's have a look at BIG's proposal right below.

Project statement:

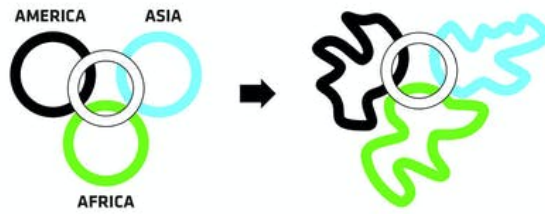
"Architects' greatest and most important task is to design man-made ecosystems - to ensure that our cities and buildings suit the way we want to live. We must make sure that our cities offer a generous framework for different people - from different backgrounds, economy, gender, culture, education and age – so they can live together in harmony while taking into account individual needs as well as the common good. Nowhere is this challenge more acrimonious than in a zoo.

It is our dream - with Givskud - to create the best possible and freest possible environment for the animals' lives and relationships with each other and visitors. To create a framework for such diverse users and residents such as gorillas, wolves, bears, lions and elephants is an extremely complex task. We are pleased to embark on an exciting journey of discovery with the Givskud staff and population of animals - and hope that we could both enhance the quality of life for the animals as well as the keepers and guests – but indeed also to discover ideas and opportunities that we will be able to transfer back into the urban jungle. Who knows perhaps a rhino can teach us something about how we live - or could live in the future?"



Image courtesy of

3 CONTINENTS



MASTERPLAN AND CIRCULATION

The 3 main routes through ZOOTOPIA - America, Africa and Asia - is organized in 3 loops, all starting from the central square.
Flying over America, biking or hiking through Africa or sailing across Asia. It's possible to hike through all continents or drive around them in the perimeter.

BIG

Image courtesy of BIG

ARCHITECTURE



ARCHITECTURE

Instead of copying the architecture from the various continents by doing vernacular architecture, we propose to integrate and hide the buildings as much as possible in the landscape. We would like to build homes for the animals that are both tailor-made especially for them and at the same time has the qualities from their original surroundings.

The Elephant house could be a small hill of rice fields, the huts by the bears would be in between a stack of lumber and there could be small cottages build into the safari-crater on the savannah.

Image courtesy of BIG



of BIG

Image courtesy



Image courtesy of BIG



Image courtesy of BIG

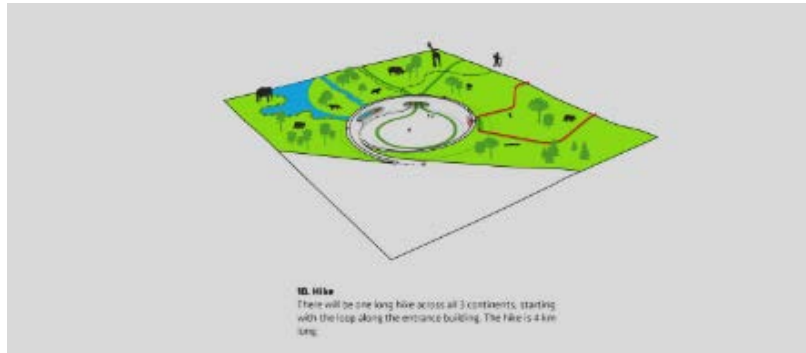


Image courtesy of BIG



Site Plan.

Image courtesy of BIG



APPENDIX :: Bjarke Ingels Group designs BIG PANDA ENERGY in Copenhagen ZOO

Big Panda Energy — panda enclosure at Copenhagen Zoo, designed by Bjarke Ingels Group.

Disegno

Apr 24, 2020 ·

Words *Kristina Rapacki* Illustrations *Alastair Philip Wiper*



The panda enclosure at Copenhagen Zoo, designed by Bjarke Ingels Group (BIG), opened in the spring of 2019.

In 2006, biology student Nathan Yaussy launched a blog dedicated to “endangered ugly things”.

It was an effort, he wrote, to “promote awareness of endangered species that wouldn’t otherwise get noticed due to appearance or obscurity”. Endangered Ugly Things featured humorous and informative posts about creatures such as the Ohio lamprey, a blood-sucking eel with a gaping, multi-toothed maw for a head, and the biological ingenuities of the old world sucker footed bat, purple burrowing frog and legless skink. Then, in 2010, Yaussy added the giant panda to the list.

This was an unexpected nomination. The giant panda is perhaps the most charismatic of “Charismatic megafauna”, the unofficial category for large animals that hold particular symbolic power in human culture. The panda has adorned the logo of the World Wildlife Fund since the 1960s, and has been the subject of such concerted breeding and re-wilding programmes that the International Union for Conservation of Nature (IUCN) declared it was no longer endangered in 2016.[1] The People’s Republic of China, the only country in which giant pandas appear in the wild, has used the animals as diplomatic pawns since the late 1950s, offering them to nations with which it

wants to establish friendly relations. (Two of the most famous among these were Hsing-Hsing and Ling-Ling, the pandas gifted to the United States following Richard Nixon's state visit in 1972.) The giant panda is far from obscure. It also can't be described as ugly.

Yaussy's argument, however, was that this overexposure has made us oblivious to the creature's plight. The panda is a wild animal and although its diet consists largely of bamboo, it is technically an omnivorous scavenger. "All creatures have behaviors that humans aren't fond of," Yaussy wrote, "but we can't expect them to act like giant teddy bears." Cue links to ugly video footage of pandas attacking people and gnawing on fly-encrusted carrion. At the time of the panda post, Endangered Ugly Things sold merchandise encouraging people to "Forget the panda, save the Ohio lamprey." Even so, Yaussy was adamant: "Turning an animal into a symbol makes you forget that it's an animal."



Mao Sun, Copenhagen Zoo's five-year-old female giant panda.

I knew about Yaussy's blog, as well as his stance on the giant panda, when I visited Copenhagen Zoo's new panda enclosure this summer. I also knew about the complex's diplomatic implications. Designed by Bjarke Ingels Group (BIG) and backed at government level, it was officially opened by Queen Margrethe II on 10 April 2019. The enclosure had taken five years to design, and cost 160m Danish kroner (\$24m). Denmark's acquisition of the pandas themselves — Mao Sun, a five-year-old female, and Xing Er, a six-year-old male — had taken the best part of a decade, and makes Denmark the latest addition to a relatively small group of countries (21 as of 2019) to host pandas from the People's Republic. At the opening, the Chinese ambassador to Denmark, Deng Ying, made the pandas' political import clear. "The comprehensive strategic partnership between China and Denmark has continued to deepen," she said, "and is moving towards a higher level in the new decade."

When the panda loan was officially confirmed during Queen Margrethe's state visit to China in 2014, it was accompanied by 40 new trade deals between the two countries. This has become the norm with panda loans: Edinburgh Zoo was offered two pandas in 2011, and the Scottish government signed an estimated £2.6bn-worth of trade deals for salmon, renewable energy and Land Rover vehicles with China shortly thereafter. China's previous salmon provider, Norway, consequently lost its trade deal, which critics suggest was China's response to Norway having awarded the Nobel Peace Prize to the Chinese dissident activist Liu Xiaobo in 2010. It is difficult to quantify the exact role pandas play in China's trade policy, but Oxford researcher Kathleen Carmel Buckingham, lead author of a 2013 *Environmental Practice* article on the topic, has suggested that "the panda can be used to seal the deal and signify a bid for a long and prosperous relationship [with host nations]." They help exercise a form of "soft, cuddly power," as the title of the paper has it.

Equipped with this information, and Yaussy's warnings against the teddification of the giant panda, I approached the enclosure feeling galvanised in my cynicism. The specially built Panda Shop, also by BIG, was the first structure I encountered. It touts panda slippers, panda toys, panda mugs, panda tea, panda posters, panda crystal balls, panda ice-cream, and even

panda themed wireless speakers (“Be the loudest panda in the living room”). Then, past a bamboo-clad bamboo storage shed, was the circular 2,450sqm enclosure itself. Largely composed of concrete, corten steel, glass and lush greenery masterminded by Schønherr Landscape Architects, it had been sunk some 3m into the ground. Given that pandas are solitary creatures that prefer not to meet outside of the three to five days a year during which the female is in heat, it had also been divided into two equal parts. First up, as I entered the area, was Mao Sun’s pen.



Mao Sun’s enclosure at Copenhagen Zoo.

I was not prepared to be so charmed. Mao had found a shaded spot under the swooping concrete arch which also serves as a pavement for visitors circumnavigating the enclosure. As I arrived, she climbed a small timber platform, flopped onto her back and set about devouring a sheaf of bamboo leaves. Soon her hind legs were wiggling indulgently in the air, like those of a tickled toddler. My jaw tightened at the sudden onset of cute aggression. *Must get closer.* On either side of the raised pavements were routes leading down and around the enclosure, occasionally opening up onto glazed views of the pandas at panda-level. I stopped at one such aperture but was disappointed — the glass had been scumbled with white paint to slightly above eye level. Perching awkwardly on a rock feature, I managed to peer into the

pen. From there, I saw Mao from behind, close, sitting up now but still munching. Temples churning and ears twitching with every bite, she held onto the bamboo stems, adorably, with a fuzzy paw.

Get a grip, I thought, stepping down to compose myself. This was neoteny at work. Features common to young mammals — large round heads, pudgy limbs, and bumbling movements — tend to elicit powerful feelings of affection in humans.[2] The effect is intensified by the fact that bears are particularly easy to anthropomorphise, their proportions being roughly akin to ours. This is the irresistible appeal of the giant panda — it's what renders it such an economic boon to zoos, and such an effective conduit for positive feelings towards China. "The political power of the panda," writes E. Elena Songster in her 2018 book *Panda Nation*, "[is] its innate ability to exude an apolitical image."





A bamboo store in the enclosure.

I continued along the lower circuit towards Xing Er's pen, which was flanked not by an overpainted window, but by Panpan, an upscale Sino-French restaurant with a capacity of 150 people. Its low-lit interior had dark furniture and fittings, making the panoramic view onto Xing's pen especially striking. Xing himself seemed unruffled by the presence of diners seated only metres from him and the large group of onlookers peering down from the upper circuit. He had propped himself against the gentle incline rising to one side of his pen and was placidly making his way through a large bouquet of bamboo. This went on for a while. Momentarily, Xing made as if to move, and the diners looked up from their plates — but he was only repositioning himself to reach more leaves. Pandas, a sign outside the restaurant read, "typically spend 16 hours a day eating up to 40kg of bamboo. For the remainder of the day, they rest."

The enclosure and its ancillary structures are more thoroughly designed than most other buildings in the zoo.[3] The concrete edifice has a rusticated effect, achieved by free-pouring cement into moulds made from bamboo rods. Similarly, stylised casts of bamboo rods in

corten steel make up fencing between Mao and Xing's enclosures, as well as decorative railings throughout the site. The plantings mimic the natural habitats of pandas in the wild, with two types of biotope — “foggy mountains” and “bamboo forest” according to Schønherr — represented. At points, images of pandas can be found embedded in the architecture. Examples include the corten-steel panel near the restaurant that sports what looks like a pinpression of a life-size animal and the enormous black and white mosaic that greeted me as I entered the ladies' toilet. From above, BIG has explained in its promotional material, the entire structure is meant to look like a yin-yang symbol, with the male and female pens looping around each other. Thankfully, this emblem does not register when navigating the site on the ground. It might've been one symbol too many in a project already awash in symbolism.



The dominant materials of the enclosure are concrete and corten steel, both of which have been moulded, throughout, around bamboo.

“The first male panda we were offered had only one testicle,” says Pernille Andersen, “so they swapped, and we got Xing Er instead.” Andersen is one of the three zookeepers appointed to look after Mao and Xing and has, along with 40 or so other zoo professionals, been an active participant in BIG’s design workshops over the past three years.

The testicles matter because, as I soon find out, the entire site is designed to facilitate the production of panda cubs. The two pens have a common area, somewhat disrupting the neatness of the aerial yin-yang shape. “They take turns accessing this, leaving a scent trace,” explains BIG partner David Zahle, who is the lead designer on the project. “Then the zookeepers will observe how they react to each others’ scents.” In March, when Mao will enter her brief oestrus, all involved hope that she and Xing will want to mate. Any resultant cubs, however, will automatically be the property of the People’s Republic because Mao and Xing are technically only on loan.

As part of her training, Andersen has visited the Chengdu Research Base of Giant Panda Breeding in China’s Sichuan province five times. Chengdu Panda Base, one of the two main panda conservation centres in China, was established in 1987 and is, as of this year, in a formal partnership with Copenhagen Zoo, which makes an annual donation of 6.5m Danish kroner (\$1m). “We’ve mainly gone there in either the breeding season or when they had cubs,” says Andersen. “They like to hand-rear the cubs — so half with the keeper and half with the mother. We had to learn how to do that.”

Conservationists disagree on what is best. In nature, female pandas often birth twins but tend not to be able to care for both. Consequently, one cub is rejected and dies. Hand-rearing has meant that the survival rate for panda cubs at Chengdu is at 90–100 per cent compared to only 30 per cent in the wild. But it also means that cubs aren’t fully socialised by the mother and, according to Copenhagen Zoo vet Mads Frost Bertelsen, “miss the opportunity to learn what it is to be a panda”. Later on, mating becomes more difficult. “Most captive-bred pandas seem to have lost the knowledge of how to get in the right position,” as David Attenborough

once explained. “To put it bluntly,” writes Bertelsen in *Panda*, a publication from Copenhagen Zoo, “we’ve managed to save this species from extinction, but perhaps we’ve gone too fast. Today, we’re left with many pandas who find it very difficult to reproduce naturally.”



A central principle of the enclosure is that it is set up to encourage breeding, with the layout carefully designed to facilitate this.

“If it were up to Copenhagen Zoo, we wouldn’t hand-rear,” says Andersen. “We prefer everything to be natural.” Last winter, when the zoo’s female polar bear gave birth to two cubs, one died because it was rejected by the mother — the zoo did not step in. With the pandas, it will be different. “We have to look at the Chinese partnership,” Andersen explains. “They might want us to hand-rear and then we probably would have to do it.” For similar reasons, Bertelsen won’t forgo the option of artificial insemination. “The biggest challenge with the pandas will be to balance Copenhagen Zoo’s ‘natural’ view of nature with the international pressure to minimise risk,” he writes.

These considerations are expressed architecturally in BIG's structure. Within the interior of the complex (off-limits to the public), there is a specially designed cub cage that is currently vacant. "If we are lucky enough to get cubs, they need to be monitored 24 hours a day," says Zahle. "During that time, you need staff to be there constantly, even at night. So [BIG] made sure there is the possibility to have a coffee machine and a small kitchenette in that area."

There are also indoor cages for Mao and Xing, where they can withdraw from the gaze of the crowds. "We always keep the stalls open so they can go inside if they need to get away," explains Andersen. Indoors, she and other staff have started training the pandas to accept having blood samples taken, and a special workout regime has been developed for Xing to train his hind legs. All the sitting and eating has given Xing a "weak posterior," says one of the keepers in a YouTube video posted by the zoo. He needs the extra strength to successfully mount Mao when the time comes.



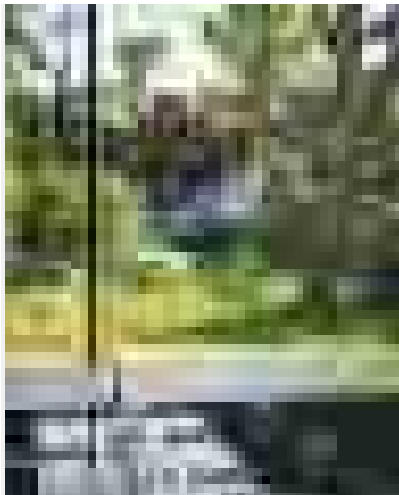


The interior of the enclosure includes a specially designed cub cage, as well as indoor cages for Mao and Xing.

Somewhat at odds with these functions is the demand to make the pandas as visible to the public as possible. The media interest in Denmark's new panda pair has been overwhelming — bordering, perhaps, on mania. Andersen remembers escorting the animals from China in April: “Just arriving at the airport with all the press... it was crazy. We had to arrive, get the pandas settled, and at the same time we knew there was going to be an opening with the queen soon after.” During the official opening, the monarch dined with her guests at Panpan, where a movement from a specially commissioned symphonic *Panda Suite* (Zhang Shuai, 2019) was premiered. The Danish media ran a steady stream of panda coverage, alternating between excited news reports (‘Now the Chinese pandas have arrived, and they are eating bamboo to their hearts’ content’ ran a headline in centre-right *Jyllands-Posten*) and think-pieces on panda diplomacy (‘The world’s cutest form of power’, in left-wing daily *Information*). At centre-left daily *Politiken*, some ventured that the 1m Danish kroner

(\$150,000) bill for the *Panda Suite* was perhaps a bit steep, and that it signalled an excessive willingness to pander to the People's Republic. "It was a crazy week," says Andersen.

Zahle's team at BIG have had to contend with the heightened attention on the pandas in their design. "We wanted to make the barrier between animal and spectator as minimal and as transparent as possible," he explains. "We tried to design the entire restaurant almost like a movie theatre, where everything inside is black, and the thing that stands out is all the greenery within the pen — and the animal itself." This departs somewhat from the philosophy behind BIG's other zoo project, the proposed re-design of Denmark's Givskud Zoo, which the practice has named Zootopia. Here, BIG has opted to "integrate and hide the buildings as much as possible in the landscape" while the animals roam freely, consciously moving away from the cage trope. Zootopia also marks a more general shift in zoo architecture. When Michael Kozdon's Tiger Territory opened at London Zoo in 2013, for instance, the architect remarked to *The Guardian* that he had tried to make the structure "fade into the background[...] our aim [was] to disappear." This hasn't been a feasible approach at Copenhagen Zoo. "In Zootopia," says Zahle, "people are enclosed within moving vehicles or pods, and so it's more like a safari park. That's not possible in a normal zoo — there needs to be a barrier."





Xing Er's pen opens up onto Pan Pan, a Sino-French restaurant with panoramic windows.

The panoramic window in Panpan that opens onto Xing's pen does not seem to bother the animal. Andersen explains that Xing has come from a zoo in Shanghai and is used to the attention: "He's very comfortable. He has the whole restaurant looking at him and that's not an issue at all." But Mao is taking longer to adapt to the presence of humans. "She's never been to any other place than Chengdu," Andersen explains. "So she didn't like glass. She didn't like seeing people — or her own reflection." The makeshift frosting I noticed on my visit was put in place to make Mao more comfortable. The zoo is currently waiting for a more permanent solution, a type of frosting through which the public can see but Mao can't. "And then I think we're going to do something on the other side, so that the public is not going to be standing against the window, knocking." I remember myself balancing to catch a glimpse of Mao at this very spot. *Ugh, people. What are we like?*

"As a representative of Denmark, it would be nice if [Bjarke Ingels] came out in favour of human rights," Cecilie Sita told the Danish news channel DR when the enclosure opened in April. Sita, a young student, was protesting outside the zoo with her friend Christina Kalesh, dressed in panda costumes. Other protesters in the small group waved Tibetan flags. They

were disappointed by the political measures that had been taken to get the pandas to Copenhagen and BIG's decision to design the enclosure.

In 2009, the relationship between Denmark and the People's Republic was strained. Then-prime minister Lars Løkke Rasmussen had met with the Dalai Lama, Tibet's spiritual leader and a figure whom Beijing views as a dangerous separatist. The status of Tibet, an autonomous region under Chinese rule since 1965, has been contested for the best part of the 20th and early 21st centuries. Rasmussen's meeting with the Dalai Lama had been a private one, but Chinese authorities swiftly notified the Danish government that it had jeopardised relations between the two countries. Shortly afterwards, Rasmussen issued an apology, and the Danish parliament declared that it would actively work against Tibetan independence. A few years later, during a Chinese state visit to Denmark in 2012, Danish police cleared the streets of demonstrators drawing attention to the question of Tibetan independence — in breach of the freedom of assembly enshrined in the Danish constitution.



As much as the enclosure itself, BIG's design is informed by its surrounding infrastructure — aspects of the design that are simultaneously intensely political and commercial.

Such acts have been instrumental in securing the loan of the pandas, critics argue. “Denmark gets the pandas because we have dropped our criticism of the Chinese repression of Tibet and because Chinese human-rights violations aren’t being criticised so much,” Danish MP Eva Flyvholm told DR. “That’s a sorry background to be receiving them against.” It’s not an unwarranted critique. When Barack Obama met with the Dalai Lama in 2010 despite Chinese warnings that it would “severely impair China-US relations”, Beijing responded by recalling US-born giant panda Tai Shan from the National Zoo in Washington, DC. China giveth giant pandas, and China taketh them away again if you don’t subscribe to the One-China policy.

The picture is made even murkier by an exposé that broke shortly after I visited Copenhagen Zoo. It turned out that the zoo had changed a map detailing the areas in which giant pandas appear in the wild. Initially, the chart had marked out the island of Taiwan — another disputed Chinese territory — as a separate country, featuring it in white while the rest of mainland China was represented by the colour green. When a Chinese delegation inspected the enclosure in March, shortly before the opening, it declared the map inaccurate. It was subsequently changed such that it now only shows a zoomed-in map of mainland China. “This way, we avoid taking a stance,” said a spokesperson from Copenhagen Zoo.