

# CONCLUSIONS AND SUGGESTIONS AFTER EEP-VCF STAFF VISIT AT THE AACHENER TIERPARK

Following the proposal from Aachener Tierpark to participate in the Bearded Vulture EEP network, it was accorded between Aachener Tierpark and EEP/VCF to invite Alex Llopis (EEP coordinator & VCF staff) to visit the Zoo, and have a look for the possibilities to house a pair of Bearded Vultures in their facilities.

## Introduction:

In December 2016 Mrs Steffi Ponican, zoo Inspector from Aachener Tierpark, contacted the EEP coordinator and asked the possibility to participate in the Bearded Vulture EEP. After several email exchanges, was accorded to invite Alex Llopis to visit the Zoo after the breeding season and evaluate the possibility if the suggested aviary from Aachener Tierpark could hold a pair of Bearded Vultures and discuss which adaptations would be necessary to perform.

The visit was done between the 11th and 12<sup>th</sup> of July 2017. Alex Llopis had the opportunity to visit the Park, to meet the staff and have an overview about their work and objectives. Furthermore he had the pleasure to meet and spend most of the time with the zoo Director Mr Wolfram Graf-Rudolf, exposing him VCF goals and exchange experiences on conservation.

## General aspects:

The Aachener Tierpark, almost 9 hectares zoo, is located in the city. Because of its size limitations, their philosophy is to host only those species which the zoo can give them the best housing conditions. Each enclosure is designed that 50% of the aviary is for the public and 50% for the animal, giving him the possibility to hide from the public if the specimen in question requires it. The Park has a Zoo-Pedagogic programme which includes a zoo-school for only Aachener schools where two days a week school kids receive their normal class lessons. Further the park includes a recovery Unit received about 600 wild animals per year for recover from City surroundings. Also must be mentioned that its marketing is the Jackass penguin collaborating in its in situ conservation.

## The potential Bearded Vulture aviary:

The potential bearded vulture aviary is a huge iron frame enclosure for golden eagle. This enclosure is located in the higher end of the zoo, far away from the humidity area, and with the higher sun exposition (see picture below; potential aviary n. 34).



The potential aviary is 10m width, 20m deep and almost 9m high in the front and 7m in the back. It has a double sloping roof ending in tip. Further the enclosure has sloping side walls, standing the pillars in the middle. Its front is free of vegetation and the other three outer sides are covered with high deciduous trees, assuring the needed shadow in summer and sun in winter. The enclosure is oriented south-north and has a sloping ground with natural cover and ending on the back with almost 2m high stone wall (see picture 1 & 2). Between the stone wall and the back fence there is a 1m width corridor where birds can hide.



*Picture 1 & 2: Potential Bearded vulture aviary surrounded with deciduous trees –assuring shadow in summer and sun in winter- and with a sloping roof, side walls, and also the ground.*

The whole aviary is made with iron and with welded iron mesh (5x5cm). The pillars are round but the crossbars are rectangular (see picture 3).



*Picture 3: The aviary is made with round iron pillars and rectangular iron crossbars.*

A nest box is installed at the back of the aviary in a central pillar, 2.5-3m from the ground. The box is less than 2m width, 1m deep and 1m high. Its roof has the same size as the nest box. Further there is no infrastructure to climb up to the box, being only possible with flapping wings to get inside (see picture 4).





Picture 4: 2 x 1 x 1m high nest box without leaders to help the birds to get inside.

In the middle and front of the aviary there are two trees, bushes and a drinking bowl which has to be filled from inside the aviary. Further there is a stone which can be used as feeding site for the birds. Perpendicular 2m long perches are installed on the iron pillars (see picture 5 & 6).

The entry is located on the right side of the aviary, far enough from the nest.



Pictures 5 & 6: on the left view of the middle of the aviary. There is a drinking bowls, a feeding stone and vegetation. On the right you can see the type of perches present in the aviary.

### Conclusions and suggestions:

From the dimension and location of the aviary, the EEP coordinator agrees to use the golden eagle aviary for holding a Bearded Vulture pair after doing several ameliorations.

All conclusions as well suggestions were directly transmitted to Mrs Steffi Ponican and the Director Mr Wolfram Graf-Rudolf. Nevertheless, following are mentioned the exposed suggestions to keep them in mind.

- Perpendicular installed perches have provoked deathly injuries by birds. Further they don't avoid collisions against the fence by entering in the cage by e.g. nest control.

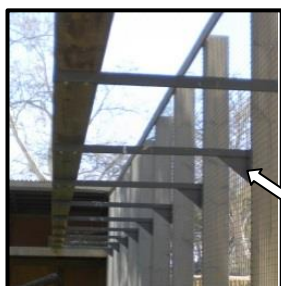


**We suggest to remove all perches to prevent collisions with them.**

- To prevent collisions by flying against the fence is recommended **to install perches around the aviary** (60cm away from the mesh and **never higher than the nest**). This gives them the possibility to move around the cage without getting on the ground, especially when the nest must be controlled by the keepers. Furthermore by installing perches throughout the aviary, pairing birds can move towards each other gradually. Subordinate birds can escape from attacks by the other and can choose to sit on a perch where they feel safer.



**We suggest to install perches approx. 2.5m from the roof, 60cm parallel from the fence, around the aviary and never higher than the nest.**



Bearded Vultures as cliff breeders, perches need to be adapted to suit the anatomy of their feet. For assuring to maintain its balance on it is recommended to install **flat perches, around 20cm wide, 5cm thick** and also need to be **rigid enough** to prevent them from bending during copulation on the perch. It is recommended to install a **holding arm perches system which avoids collisions** with it (see white arrow).

Because of structure of the aviary we suggest to **install the perches about 2.5m below the roof** at the height of the first cable from the roof (see weight arrow). This will reduce the probability to collide with the crossbars.



- To soften possible collisions with the **iron crossbars and iron pillars** located in the middle of the aviary we suggest to **cover them with wood**. This will assure better visibility for the birds of these structures and reduce serious accidents by colliding with them.

- Bearded Vultures as cliff breeders use small caves in the wild (90-120cm height), and well protected from bad climatology. It is well known that Bearded Vultures by wet nest normally abandon the clutch. It will be necessary to build completely a new nest-platform and an appropriate roof. We recommended to **install a 5m platform running from the middle pillar –where now is fixed the nest box- to the left pillar**. The platform should be **divided into two**. The left side should be **3m width** and a nest should be installed there in the left corner where in the morning the sun shines. The division of the platform into two provides that the subordinate bird can somewhere to shelter by bad weather. The platform should be **1.3m deep and 1.2m height**. The base of the platform should be at the same height as the perches.

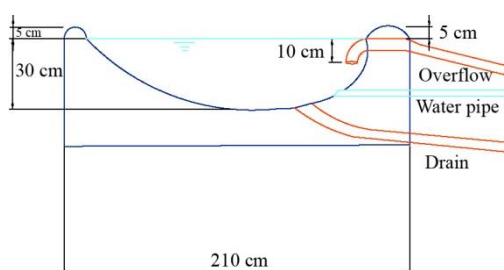


- In the Nest-platform a **nest 1.3 x 1.3m should be built** in the left corner where the sun shines during the morning and **exactly** as is described in the **guidelines** for housing BV in captivity.





- To prevent the nest from getting wet by stormy and windy weather, the **roof should project out 1-1.5m** above the nest platform.
- Bearded Vultures are soaring birds of prey and are impossible for many of them, especially females and older birds, to access perches through flapping flight. Steps make it much easier for the birds to transport material to the nest (an important behaviour during the breeding season that reinforces the pair bond) and to bring food to the perches, where it can be handled more easily than on the floor.  
We propose **adding stone steps (45-50cm height) at the stone wall** for helping the birds to climb to the platform.
- All birds of prey drink and bath regularly. And especially during egg formation, females drink large quantities of water. The actual drinking bath is located just below the future perches, from where the birds can dirty it with their own faeces.  
**We suggest to build a new drinking bowl minimum 2m far from the perches.** This should have a soft access ramp and big enough to allow birds to bathe (210 x 130cm wide and 30-35cm deep). Is recommended to install a **mechanism that allows the drinking bowl to be regulated from outside the aviary**, what avoids disturbances by entering in the aviary during the breeding season. A **closed current water system with filters**, like an artificial river ending with a basin helps to maintain the water clean and reduce the necessity to enter in the aviary.



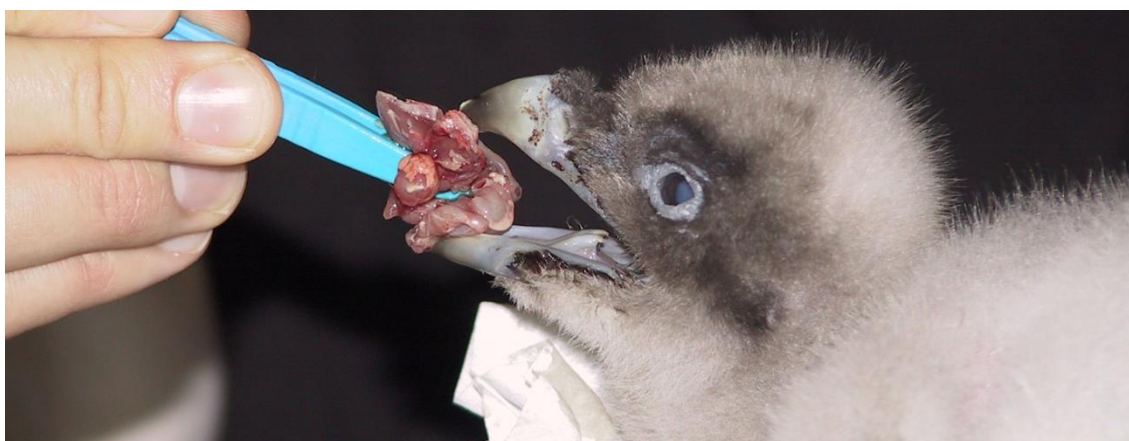
- Bearded Vultures develop the peculiar habit of bathing in mud rich in iron oxide. Although the reason for this behaviour is still unknown, they must be kept in captivity in good physical and psychological condition, offering them all available means of developing as many innate behavioural patterns as possible. Therefore it is recommended to **install a mud bath in the ground near the feeding stone** where mud rich in iron oxide can be provided every 15 days (1m in diameter, and 10cm deep). Use only mud **free of any toxic substances** (heavy metals or other organic contaminants).



- To minimize injuries because of collision is very important to offer visible and clear landing places. Raptors with a total wing span from 2.5-3m they need approx. a double landing place free of vegetation. During pair bonding or breeding season -where birds are more sensitive-, fights can occur and provoke forced landing by the subordinate bird. That's why is very important that birds have a clear visible landing site. Furthermore by flapping to reach to the upper part of the aviary, dense vegetation can avoid the transport of food or nest material -consequently reduce breeding stimulus-, or/and damage the flight feathers, giving the birds a bad look for the public. **We suggest to remove the full vegetation.** Maximum you can keep small bushes at the corners of the aviaries.
- **Is recommended to feed the birds through the mesh.** We must remember their cage = their territory. Like in the wild, if you approach their territory the pair feels threatened and leaves the nest. Install a 90 x 90cm feeding place near the door and feed the birds daily through mesh without entering in the aviary.



- Further to avoid birds can hide behind the stone wall, or the dominant bird could corner the subordinate bird, we suggest to **covering it with a wooden platform.**



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