Conservation Plan

Snowdon Aviary

Date: 09/07/2016
Revision Number: 1
Author: Rhiannon Szmidt

Contents

1. Executive Summary

The following document provides a summary about the significance of the Grade II* listed Snowdon Aviary ahead of a proposed project to restore the Aviary and reignite the public's interest in its architecture.

The Snowdon Aviary was the first permanent tensile structure in the UK and is a unique design which still amazes engineers today. It has been the inspiration for numerous buildings in the decades that followed and, at the time, gave visitors to London Zoo the unique experience of walking through a seemingly floating structure with no barriers between them and the birds flying above. It was one of the first structures to use Aluminium as a primary material and is especially significant as the first project collaborated by Cedric Price and Frank Newby who went on to work together on numerous projects.

The Conservation Plan outlines the key policies required to maintain the structure including who should be consulted, what should be preserved and where compromises may have to be made in order to improve access to and the use of the Aviary. These policies include

- Prioritising the restoration of the structure to extend its lifespan
- Improving access both physically and recognising other barriers to people appreciating the Aviary
- How new build works should not detract from the Aviary but should also follow the zoo's heritage in being a legacy themselves
- Encouraging maintenance to be a key factor to protect the Aviary in the long term and to reduce the environmental impacts of the project

2. Introduction

In 2001, Purcell Architects and Colson Stone Practice Landscape Architects collaborated to carry out a site wide Conservation Plan and Gazateer for London Zoo. A wealth of information was gathered to create the plan using the archives at the Zoological Society of London (ZSL) and it is recommended that this Conservation Plan be read in collaboration with the 2001 site wide Conservation Plan. The original Conservation Plan was created in consultation with English Heritage (now Heritage England), the Planning Department at Westminster City Council, The Royal Parks Agency, the Heritage Lottery Fund and ZSL's internal staff. In addition, press clippings at the library were invaluable in gauging the change in attitudes to London Zoo and zoo's in general.

This Conservation Plan focuses on the Snowdon Aviary as it looks towards its next chapter with the support of funding from the Heritage Lottery Fund. ZSL are embarking on the development phase of a project to restore the Snowdon Aviary which is currently on the At Risk Register with Heritage England. The aim of the project is to extend the life of the Aviary and reinvigorate interest in the architecture of the exhibit and the animals within it with new messaging around ZSL's important conservation work.

The plan has been authored by ZSL's Senior Project Manager, Rhiannon Szmidt, who is responsible for delivering the capital works side of the redevelopment. The Projects Team at ZSL deliver all minor and major projects across the site and are therefore best placed to continue to maintain and update the Conservation Plan in collaboration with colleagues across the society. In particular, the Snowdon project is currently consulting with community groups that are currently underrepresented in visitor numbers and the feedback from these groups such as Age UK, have been used to inform the policies included within the plan. As this has been written internally rather than by a qualified consultant, there may be some limitations to the contents.

3. Understanding the Heritage

3.1. Description of the Heritage

The Snowdon Aviary (Northern Aviary) was first commissioned by the Zoological Society of London in 1960 as a replacement for the Great Aviary (dated 1888). It was highlighted in Sir Hugh Casson's 1958 Development Plan and Anthony Armstrong Jones (Lord Snowdon) was chosen to design the aviary after the secretary to the Society, Solly Zuckerman, was shown a birdcage that Lord Snowdon had designed for the Queen Mother in Windsor. It was Casson who recommended Cedric Price and Frank Newby be brought in to assist Armstrong-Jones in the design as he was not a qualified architect.

The design brief was a challenging one with an awkward long and thin site, constrained on both sides by Prince Albert Road and the Regent's Canal and with a steep topography. The design criteria could have been written today in terms of the requirements for zoological buildings and they echo similar requirements that will be set out for any change in species or refurbishment of the Snowdon Aviary:

- Maximise the volume of the usable enclosed space for the animals
- Accommodate all activities of the animals (nesting, breeding, perching, washing, feeding)
- Provide sufficient sheltered areas for the animals whilst at the same time allowing for public observation
- Minimum maintenance of the structure and the landscaping
- A recognisable form, both in and outside the zoo

This was to be a walkthrough aviary, the first of its kind, and was the second largest aviary in the world at the time of its construction. Armstrong-Jones and Price recognised early on that this would be a highly engineered structure and Newby helped turn the ideas of a weightless, birdlike structure into a reality.

Frank Newby had trained at FJ Samuely and Partners and was taken under the wings of Felix Samuely early in his career becoming his Personal Assistant a year or so after joining the practice giving him access to a number of inspirational projects including those of the Festival of Britain which was renowned for showcasing the latest in structural technology. This can clearly be seen as an inspiration for the Snowdon Aviary, particularly the Skylon. Price had also been inspired by Samuely after seeing him lecture at the AA where he was a student giving him an appreciation for pre-stressed concrete and creating weightless structures. The result of these great minds coming together was the Snowdon Aviary – the first of many projects that Newby and Price worked on together.

3.2. History

For the full historical context of London Zoo and the Snowdon Aviary, please refer to the 2001 Conservation Plan. An extracted summary is provided below.

London Zoo (as part of the Zoological Society of London) was established in 1826 by Royal Charter for 'the advancement of zoology and animal physiology and the introduction of new and curious subjects of the animal kingdom'. It opened in April 1826 as the first institution in the world devoted entirely to the study and display of animals. Fellows of the Society paid a £1 annual fee to fund scientific research, a library, a museum

and the Zoological Garden (which is the zoo we know today). This was positioned in the North East Corner of Regent's Park on Crown Land.

The zoo started at 5 acres (a triangle of land South of the present day Outer Circle Road) and was rapidly expanded in 1831 with an additional 10 acres on the main site and 7 acres North of the road (the Middle Gardens'). 3 acres were then granted to the North of the Canal although this was exchanged for the Westward expansion of the Middle Gardens in 1841. Further expansion to the East occurred in 1850 and the re-acquisition of the land north of the canal followed in 1869 bringing the zoo almost to its present day 36 acres which was realised in 1935. A further 10 acres has been earmarked for possible future expansion of London Zoo although there are no current plans to pursue this.

The Zoo was originally only open to Fellows of the Society and their guests although it is not clear if this was strictly enforced. By 1846 and hit with falling numbers, the Zoo opened its doors to the general public.

Over the years, the Zoo has also been known for its inhabitants as well as the buildings they were housed in. The zoo exhibited the first Hippopotamus in Europe since the Roman times when Obaysch arrived in 1850. The Black Bear who arrived in 1914 went on to inspire Winnie the Pooh by A.A. Milne. Popularity increased with the public until it hit a peak of 3 million visitors in the 1950's. With animal welfare changes, interactions with the animals has slowly been discouraged from the times of the public feeding and tea parties with chimps. Now the zoo offers VIP experience at a premium and these are not the glamorous events of old but offer visitors to experience life as a zoo keeper and learn more about the animals in a slightly more intimate setting. There is also more of a focus on the conservation work and research that the Zoo was founded on which can be seen in the Interpretation around the zoo and the material on the Zoos website. Signs are no longer needed to disway the public (in general) as attitudes have changed and people are a lot more aware about how animals should be treated.

Zoo Design has been a key feature at the zoo with research ever changing about the environments that animals should be kept in. Each year new research may come to light and contradict previous findings, rendering elements of previously designed buildings redundant. There have been many Zoo Firsts at London Zoo which have excited and attracted visitors e.g. Reptile House 1849, Aquarium 1853, Insect House 1881, Children's Zoo 1935. The iconic Lubetkin Pool is still shown as an example of iconic pre-cast concrete to students on architecture and engineering courses. This is a prime example of something which was designed with its occupant in mind, yet it was soon found to be unsuitable. Other animals have been trialled in here but it currently remains empty as a relic admired by those in the know as nothing has thrived in it.

3.3. Local Context

ZSL London Zoo is located on the border of Camden and Westminster in the city of London. It is situated within Regent's Park at the Northern Boundary and is located on land leased long term from the Royal Parks by Royal decree. The surrounding area is therefore green parkland to the South with the residential area of Primrose Hill to the North. The Regent's Canal traverses the site forming what is known within the zoo as the North Bank which is connected to the main site by the East and West Tunnels and two bridges.

Most visitors to London Zoo come via Camden Town, Baker Street or St John's Wood which are popular areas of London with their own shops, cafes, restaurants and visitor attractions. Camden Town is particularly popular with tourists visiting the famous Camden Market and the Camden Lock, as well as renowned music venues such as the Electric Ballroom and the Roundhouse. Primrose Hill offers beautiful views across London including situating the Snowdon Aviary on the London skyline.

Other neighbouring institutions on the Outer Circle include the US Ambassador's residence, Winfield House, and the Islamic Cultural Centre and The London Central Mosque.

3.4. Looking After the Heritage

With a large number of buildings on the London Zoo site that have been recognised for their significance in both zoo design and architectural heritage, it is unsurprising that a number of the buildings have been listed over time. This has helped impose statutory restrictions to protect the heritage on site. See Appendix A for buildings that have been listed and those that are considered of importance to ZSL for future planning purposes. Any work that is done to these structures is done in full consultation with Heritage England and other related bodies such as the 20th Century Society who will need to be consulted regarding the Snowdon Aviary due to the time it was built.

Table 1 Listed Buildings at ZSL London Zoo

Title of Listed Building	Architect	Date Built	Grade
Northern Aviary (Snowdon Aviary)	Lord Snowdon (Anthony Armstrong-Jones) and Cedric Price	1962-4	II*
Primrose Hill Footbridge	Fowler	1879-80	II
North Gate Kiosk	Lubetkin	1936-7	II
Giraffe House	Decimus Burton	1936-7	II
West Footbridge	Casson Conder	1960-61	II
Gorilla House (Round House)	Lubetkin	1932-3	I
Mappin Terraces	Joass, Chalmers, James, Mitchell	1913-14	II
Mappin Café	Joass	1914-20	II
Aquarium	Joass	1923-24	II
Raven's Cage	Decimus Burton	1929	II
Clock Tower	Decimus Burton	1828	II
Elephant House (The Casson's)	Casson Conder	1962-65	II*
Penguin Pool	Lubetkin	1934	I
East Tunnel	Decimus Burton	1829-30	II
Telephone Box	Giles Gilbert Scott	1929-35	II
War Memorial			

In addition, London Zoo is in a Conservation Area and situated in Regent's Park therefore we have to be considerate towards our neighbours in planning any alterations to the site or its buildings. This is managed through early consultation with stakeholder groups, taking on comments to inform the design process. Some of the relevant stakeholders for Regents Park include:

- Friends of Regents Park

- Heritage England
- 20th Century Society
- The Royal Parks
- Local residents
- Westminster Council
- Camden Council (as the neighbouring borough)
- The Canal and River Trust
- The London Waterbus Company

To maintain the buildings outside of the major building projects, ZSL had a Building Condition Survey done in 2016 to identify the relevant works required under a ten year Planned Prepared Maintenance Plan (PPM). There is also an asset register to record the M&E and physical assets that are on site. Having a maintenance contract in place with an external company, Pareto FM, the works required under the PPM are carried out to maintain these buildings. Please see the Building Condition Report for the Snowdon Aviary attached in Appendix B.

To maintain statutory compliance, an annual asbestos survey is carried out by TMS who maintain the asbestos database for ZSL. This identifies any areas of risk so that full R&D surveys can be carried out before any works commence in an 'at risk' area. In addition, an internal Health, Safety and Security Team carry out Fire Risk Assessments with an external inspector and hold regular internal reviews of all buildings to identify any risks or issues. Accessibility on the site does require improvement and as such an Access Survey was carried out in 2016 and an action plan is in place to improve accessibility where possible. All new build projects must comply with Building Regulations including Part M and ZSL are committed to providing better facilities for all by engaging with an Access Consultant on all projects.

In addition, it is important that ZSL ensure that people visiting the zoo and those outside of it understand the importance of its heritage. The zoo is often just seen as a place to learn about animals but ZSL strives to inspire visitors to recognise that its buildings are a great example of how architecture has changed in the UK over the years with some top rate architects having designed buildings since the zoo was opened to the public. On display around the zoo, each building of significance has a plaque of information for our visitors. In addition, ZSL runs History Tours around the zoo twice monthly, which includes the key buildings of architectural importance. This provides an opportunity for those who are interested in the heritage of the zoo buildings to learn more about them. In addition, the zoo has hosted visiting architects and students from around the world who have come to see the magnificent buildings on site at both London and Whipsnade Zoos. A webpage dedicated to London Zoo's heritage buildings is available on the ZSL website and the ZSL Library has a wealth of information which is available to the public.

4. Statement of Significance

4.1. The Structure

The following description of the Snowdon Aviary is an extract from the Zoological Society of London – Regent's Park Site: Conservation Plan 2001:

'The Aviary is substantial, measuring 45 meters x 19 meters with a maximum height of 24 meters. The frame consists of large aluminium tubes linked together by steel cables. Primary support to ground level is provided by opposed pairs of sheer legs, each 16 meters long, anchored on massive concrete abutments. Each of the legs is angled outwards at about 60 degrees. The sheer legs are made of multiple curved extrusions welded together into 600mm diameter tubes with conical bases and heads. The structure is held in tension by four tetrahedral frames flanking the sheer legs in pairs of unequal sizes, 17 meters and 13 meters in height. These frames are also made of aluminium tubes, in this case 300mm diameter, and joined at their intersections by aluminium casings. The frames are held in position only by the steel cables which criss-cross the whole structure; it requires careful analysis to understand the structural forces at work. The steel cables vary from 25 - 65mm diameter and are sheathed in plastic. Apart from their primary function to complete the structural frame, the cables also provide support for an anodised aluminium netting which has fairly large rectangular apertures, sufficient to allow sparrows in and out.

Public access to the Aviary is available at each end, protected by curtained doorways. There is a single route through the interior provided by a cantilevered pre-stressed reinforced concrete bridgewhich rises at the centre to an angled crown which also zig zags on plan. The form of the walkway is that of a shallow M – said to be Anthony Armstrong-Jones' (Lord Snowdon) tribute to his new wife Princess Margaret. The original embankment has been cut away to form an artificial cliff face, thus creating a real sense to the visitor of walking through space and being able to see the birds from a variety of viewpoints. Apart from the views provided within the Aviary, the walkway also affords an excellent view of the Cotton Terraces [now home to London Zoo's Into Africa giving visitors views in the African Hunting Dog enclosure].

The Aviary makes a major impression on the view toward the north boundary of the site and is juxtaposed with the west footbridge to good effect. The use of aluminium as a structural material and the use of tensioned structure were both pioneering developments, the latter having been copied in numerous buildings around the world in the three decades since its construction. The construction of the Aviary incorporates some of the techniques used in the 'skylon' – a prominent feature of the Festival of Britain – erected on the South Bank. Models and computers were apparently used to develop the design: this too must have been a pioneering technique at the time. The original designs by the engineers were for a steel structure which resulted in a much more slender frame. The decision to move to aluminium appears to have been inspired by the desire to use a 'modern' lightweight material – even though this has the effect of making the structure look heavier. There was also considerable discussion over the appropriate material to use as a mesh. Various alternatives were considered, including plastic which was rejected on the grounds that it was not sufficiently durable. Eventually aluminium mesh was chosen which was installed in large semi-rigid panels. This proved to be very difficult and costly. It is understood that these technical difficulties delayed the opening until 1965 which would not be surprising.'

4.2. Listing and Significance

The Snowdon Aviary was listed as Grade II* on 12th June 1998 for its special architectural or historic significance. It is particularly significant as it was the first permanent tension building in Britain (following the temporary Skylon built for the Festival of Britain in 1951 which was the first tensioned structure aside from bridges). In addition, it was one of the first buildings to use aluminium on a large scale. The Aviary, although designed as a permanent structure, was designed in the mode of informal exhibition architecture which was popular in the 1950's and 60's. It was a landmark building of its time with the use of novel ideas inspired by the likes of Buckminster Fuller who was revered by Price and Newby.

The following are considered key points of significance which should be celebrated and respected when designing any alterations to the structure:

- The use of aluminium as a relatively new material in the construction industry was significant for the time and was a conscious choice by Price and Newby despite the fact it could have been seemingly more weightless had it been made from steel.
- The Aviary is of a time in Zoo design when buildings were emulating their inhabitants as shown by the contrast between the Snowdon Aviary which appears to subtly float above the ground like a bird, and the Casson Elephant and Rhino Pavillion, which is built from heavy, clunky concrete, despite both being designed at roughly the same time.
- The innovative way the structure is held together still marvels engineers today as the first permanent tensioned structure in Britain
- The cantilevered concrete walkway floats effortlessly in the space and appears lightweight giving visitors the feeling that they are truly walking amongst the animals. The walkway is also significant for the shape of a shallow M to supposedly in dedication for Princess Margaret, the new wife of Armstrong-Jones at the time.
- The design aimed to blur the lines between the inside and the outside with the mesh appearing to vanish from view with people and animals feeling like there was no distinction between being within the Aviary or outside of it, especially achieved by giving the birds great expanses to fly around.
- Cedric Price, whilst admired by many, had relatively few of his designs actually built therefore the Aviary is a rare opportunity to see a Cedric Price building. It should also be noted that Price was a socialist and believed strongly that a building should be suited to its user and it should be adapted or demolished when it became redundant to those uses. ZSL have faced this dilemma regarding the Snowdon Aviary and historic building condition surveys and site development plans prior to it receiving listed status actually earmarked the Aviary for demolition. With this in mind, ZSL is keen to adapt the space to give it a new lease of life and to reinvigorate visitors interest in the Aviary.

4.3. Landscaping

Records from 1826 (Commissioners) and 1828 (Mogg) show that the land on which the Snowdon Aviary now stands was heavily wooded prior to 1836 (Bartlett and Britton) when the area seems to have been cleared leaving a series of tree groupings and winding paths. By 1870 the OS plans show the area was more evenly distributed with trees. The development of the landscaping since the area started to be used by the zoo as part of the site has largely been driven by the addition of physical structures. It remains largely naturalistic to date with a number of mature trees (Ash, Willow) on the banks by the Education Building.

A tree survey of the Snowdon Aviary site has been carried out as part of the project and is enclosed in Appendix C. It is noted that, whilst none of the trees are subject to Tree Preservation Areas, as the zoo is within a Conservation Area, they are protected under similar legislation. None of the trees within the aviary itself are classed as being highly significant although there are some adjacent to the road which are valued for their prominence.

Table 2 Value of Trees Located Within the Snowdon Aviary

Tree Ref	Type	Grade	Value
1	Sycamore	C	Low significance
2	Laurel	C	Low significance
3	Sycamore	B2	Not particularly significant – just passed into the B category
4	Sycamore	B2	Not particularly significant – just passed into the B category
5	Poplar Sp	B3	Not particularly significant however a useful perch for the birds
6	Crack Willow	U	Removal recommended
7	Crack Willow	C	Low significance
8	Sycamore	B3	Not particularly significant however a useful perch for the birds
9	Weeping Willow	U	Removal recommended
G1	Laurel, Portuguese Laurel	B3	Not particularly significant however a useful perch for the birds

Key to Grades: *U – Unsuitable for retention, A – Trees of High Quality, B – Trees of Moderate Quality, C – Trees of Low Quality, 1 – Arboricultural Qualities, 2 – Landscape Qualities, 3 – Conservation Qualities*

It should be noted that whilst the zoo are always keen to recreate a natural feel in the enclosures for the animals, the proposal to house Colobus Monkeys within the Snowdon Aviary does cause a dilemma regarding the landscaping that can be done and the trees that can be retained. Colobus Monkeys are arboreal and thus they will strip any vegetation in the exhibit. Any landscape design will need to ensure that trees added to the exhibit are non-toxic and are unappealing to the monkeys.

5. Risks and Opportunities

Whilst the plans for the Snowdon Aviary have not yet been set in stone in terms of the final design proposals, a few key decisions have been identified for the future of the Aviary and these present a number of risks and opportunities that need to be managed:

- The species within the Aviary is to change from solely birds to a more diverse ecosystem of Colobus Monkeys, Red Duiker, African Grey Parrots and Waterfowl all native to African forests
- With the addition of new species, new animal housing will be required
- The mesh which is currently on the Aviary may need to change for improved maintenance and to be suitable for the new species
- ZSL would like to engage with more people from the local and wider community through the Snowdon Aviary and therefore it has been proposed that an internal space is created for running activities with these groups
- The project is also aiming to expand the educational offer at ZSL by taking advantage of the Aviary's unique engineering to teach STEM subjects to pupils through discussions around the design
- There will be operational requirements such as improving access for maintenance and providing facilities for waste and storage adjacent to the Aviary

5.1. Risks

As with any works to a Heritage Structure, a project does carry risks and compromises that may need to be made.

- New buildings will be required for the Aviary with the addition of new species and a need for a community and learning centre. These need to ensure they do not detract from the Aviary or confuse people as to what is new and what is original.
- New mesh will be required for the Aviary and this may not be replaced like for like as the current mesh is unsuitable for the species proposed. Discussions have been held with Historic England and it has been advised that this should not be too significant an issue but that mesh samples will be required for consultation with the relevant bodies.
- The proposed species are arboreal and unfortunately strip and eat vegetation in high volumes. This therefore puts the landscaping within the Aviary at risk as most of the current trees will need to be removed. Given the ground conditions and the heavy contamination of the soil in the aviary this may also be an opportunity to replace the soil and vegetation with more suitable trees to maintain the look and feel of the Aviary. It is also common in zoo exhibits to use fake trees which are easier to maintain and still give a natural look.
- An Ecology Survey was carried out by Windrush Ecology (see Appendix D), the results of which conclude:
    - Three trees in the vicinity have the potential for roosting bats. Only one of these is within the Aviary although the report notes that there is not sufficient access for bats to get into the aviary and thus the likelihood of roosting bats is low.
    - Trees and shrubs offer the potential for nesting birds in and around the Aviary. Starling's, a species which is priority for conservation action under the UK Biodiversity Framework, are seen in and around the Aviary.
    - Aesculapian Snakes are known to live along the Regent's canal but no reptile species were observed during the inspection

- The site is not considered suitable habitat for any protected or notable species.

- The condition of the Aviary is difficult to ascertain as the elements require specialist surveys. Assumptions with regards to budget have been made based on a visual Structural Survey, however, these may be incorrect. To preserve the structure for the future ideally the cables would be replaced to guarantee a life expectancy. However, with budget pressures, ZSL will need to take an objective view on the risk based on the results of more intrusive structural surveys. Even with the results of the surveys being positive, it is impossible to guarantee a lifespan for the elements that will remain from the original structure.
- Access to the Aviary is an issue and it is hoped that this can be improved as part of the project. Without improvements, the Aviary will not be available for all. In general, access to the North Bank of the Zoo is via two tunnels which are not ideal for wheelchair users or those with limited mobility. It is outside of the scope of the project to make amendments to these tunnels to improve access although ZSL is dedicated to improving access around the site. Limited capital, however, means these improvement works will be phased over a number of years.

5.2. Opportunities

Carrying out a project to restore the Snowdon Aviary presents a large number of opportunities which is a key reason for the Aviary being selected as a project to steer the Society towards wider community engagement and a greater focus on the architectural heritage at London Zoo.

- The North Bank of the Zoo is currently one of the least visited areas with visitors feeding back that it is uninviting and that they are not aware that there is anything over there. Livening up interest in the Snowdon Aviary would encourage visitors to explore the North Bank and could lead to further development as this is one of the few areas remaining on the London Zoo site that has land available for new and exciting projects
- With the Snowdon's adjacency to the Education Building, it is a perfect location to run sessions particularly to discuss ecosystems and engineering of tensile structures. These subjects are of most interest to KS4 and 5 pupils and thus we could run more sessions with students in these age brackets.
- Being a relatively secluded part of the zoo, it is a great space for community groups to run independent activities using any facilities that are provided.
- Access into and through the Aviary is challenging for wheelchair users currently. By refurbishing the Aviary, we can look to ways to improve this significantly. This also applies to the surrounding area which has steep sloping pathways that are not compliant under the Equality Act. The project could also look at other ways to widen accessibility to London Zoo. For example, our work with groups of the visually impaired has highlighted that they need to be able to get as close to the animals as possible and that glare and not having a contrasting background in exhibits are challenges in our other exhibits. Having other sensory stimulus also improves the experience such as smells, touch items and live or recorded talks.
- Changing the mesh to a smaller gauge will enable a wider range of species to use the Aviary without requiring another major overhaul. Adding in this flexibility safeguards the Aviary's future at the zoo as ZSL generally design to short lifespans for buildings as changing regulatory requirements for animal welfare often leave buildings not fit for purpose and hence designing a space that can be altered for another species can ensure it is enjoyed as a zoo exhibit for years to come.

- The Snowdon Aviary is one of the most iconic buildings on site and it is also enjoyed by the wider public as it can be seen from Regent's Canal and from Primrose Hill. Rejuvenating the Aviary will therefore not only be exciting for zoo visitors and community partners that we are working with but also for opportune visitors to the surrounding area.
- Whilst Price and Newby were tasked with creating a low-maintenance structure, access for maintenance is difficult due to the height of the Aviary. As a result it has gone into disrepair and unsightly patchwork mesh has been added over the years. A number of eyebolts were installed in the past to allow for people to work in the aviary on ropes. The project presents an opportunity to improve access for maintenance.

6. Policies

6.1. Conservation

The following policies should be adopted for the conservation of the heritage of the Snowdon Aviary:

a) In approaching the project, and when considering budgetary constraints the following order of priority should be followed:
   i. Refurbishment of the structure and safeguarding it for future generations
   ii. Requirements for animal welfare of the species inhabiting the space
   iii. Improved access and outreach to share the heritage of the Snowdon Aviary, the zoo and messaging around ecosystems with those currently not aware and those who would like to know more

b) In developing proposals, key stakeholders including Heritage England and the 20th Century Society should be consulted for their knowledge of architecture preservation and shared interest in raising the profile of the Snowdon Aviary.

c) In landscaping the scheme, the Westminster Council Tree Officer should be provided with detailed information including an Aboricultural Tree Survey and Impact Assessments from a qualified individual.

d) Feedback from community groups, including those that ZSL already have a relationship with and those that are currently underrepresented in the zoos visitors, should be sought throughout the design development and this should be used to inform the process.

e) The Snowdon Aviary has recently been put on the At Risk Register and it should be an aim of the project to bring this up to standard so that it can be acknowledged that it is no longer at risk.

f) Intrusive structural surveys should be carried out as early as possible in the project to identify the works required as this will shape the rest of the scheme.

g) The project should identify steps for continued maintenance of the Aviary in the form of a Management and Maintenance Plan. Improvements to access for maintenance should be made.

h) To protect elements such as the pre-stressed concrete walkway, the design team should identify the maximum loads for the structure so visitor numbers can be limited as there is expected to be higher visitor demand once the restoration has taken place.

6.2. New Work

The following policies should be adopted for all new works to the Snowdon Aviary:

a) Reference to the Conservation Plan should be made throughout the project and should be supplemented following further consultations with stakeholders. The Conservation Plan should be given to all members of the project team and should form part of the project brief.

b) An appropriate design team should be appointed including specialists in structural engineering, geotechnical engineering and heritage architecture to appropriately manage the impact of new works on the heritage of the site

c) It is acknowledged that there needs to be an interface with the Snowdon Aviary to create a route to external animal housing. These should be located so as to minimise the impact on the original Aviary design.

d) Any new buildings should be located away from the Aviary as far as reasonably practical and should not detract from the Aviary design
e) It is preferable to contrast the Snowdon Aviary rather than match it so there is clear distinction between the original elements and the new elements although they should be complimentary.
f) Following in the Zoo's tradition of memorable architecture, the design team should also aspire to leave their own legacy behind whilst being mindful of the aims of the project.
g) All new build work should follow ZSL contractor guidelines including the use of sustainable materials such as FSE Timber
h) The Management and Maintenance Plan for the project should include the new works and elements such as Interpretation and Digital. All new buildings should be easy to maintain and should particularly prevent damage by pests which is a common source of deterioration in zoo exhibits.

6.3. Access

The following policies should be adopted to improve access to the Snowdon Aviary and the surrounding area:

a) Recommendations from the ZSL Disability Access audit should be incorporated where possible including to the surrounding pathways which have slopes which are non-compliant
b) The current access to the Aviary is via doors which are difficult to manage for wheelchair users with a non-functioning automatic door – these should be addressed
c) The walkways are narrow and thus flow through the Aviary is difficult for all user groups – where reasonable this should be addressed by widening the walkways without detracting from the original design features
d) To limit issues with the narrow walkways and to protect visitor safety, a policy of no buggies or pushchairs in the Aviary will be adopted and a secure facility for people to leave their buggies will be required as part of the design
e) For the elderly and those with reduced mobility, there should be some seating within the vicinity as it is likely the picnic bench area adjacent to the Aviary will be demolished.
f) The exhibit will be an immersive experience enabling people to get up close to the animals which is good for those with visual impairments. Use of live talks and sensory interpretation should also be included.
g) When choosing glazing options, glare should be reduced to improve visibility.
h) The height of viewing areas and interpretation signage should be suitable for both adults and children.
i) Contrasting colours are advisable for those with visual impairments where it is reasonably practical.
j) Part M Building Regulations should be adhered to unless there is a strongly justifiable reason. Occasionally zoo exhibits do have to compromise on some elements for safety of animals and visitors due to the unique nature of the buildings use.
k) An Access Consultant should be appointed to review any designs as part of the design process
l) As part of the Snowdon Aviary Project, with the support of the Heritage Lottery Fund, ZSL is consulting with a wide variety of community groups and the results of these consultations need to be clearly referenced and addressed where possible.
m) The project should also improve access to information regarding the Snowdon Aviary, London Zoo's architectural history and the work ZSL do as a conservation and scientific organisation to those unable

to visit the zoo such as through interactive areas on the ZSL website, live CCTV feeds of the Aviary and improved signage outside of the zoo e.g. along the canal towpath.

6.4. Climate Change

The following policies should be adopted to address the impact of Climate Change:

a) The Snowdon Aviary project should aim to limit the exhibits impact on Climate Change (see section 6.5.)
b) Environmental controls should be flexible to ensure that any changes in climate can be accommodated without the need for further works
c) It is likely that the Picnic Shelters to the rear of the Snowdon will be removed which currently provide shelter from the rain – a covered area should be provided so that visitors can still enjoy the exhibit even when it is raining.

6.5. Effects on the Environment

The following policies should be adopted to reduce the effect of the project on the environment both during construction and throughout its lifespan:

a) The waste management at ZSL has received awards in the past with less than 3% of waste going to landfill and with 8 different recycling streams. ZSL therefore manages all construction waste to ensure that it is disposed of properly and is recorded. All contractors must adhere to this policy.
b) A cost benefit analysis should be carried out to identify suitable environmental strategies to reduce energy use through choice of materials and supplies
c) With animal exhibits, all materials need to be hard-wearing and it is preferable that off the shelf systems are utilised rather than bespoke so the environment can be changed easily to meet needs and so individual elements can be replaced at the end of their life rather than a whole system.
d) The durability of materials should be a key consideration and learning how keepers and animals use and interact with spaces is crucial in material selections.
e) Natural light is better for the animals and is more cost effective so this should be used where possible rather than artificial lighting
f) The project should seek to improve the elements such as the electrical infrastructure where this is at risk of failure to safeguard against unnecessary future works.
g) Where possible, reuse of materials should be considered.

6.6. Managing Information About the Heritage

The following policies should be adopted to manage information about the Heritage of the Snowdon Aviary:

a) The ZSL Library already holds a wealth of information on the Snowdon Aviary and the heritage on site. Any further research and a copy of the Conservation Plan should be provided to the Library fro archiving and review by the public on request.
b) The Interpretation Team at ZSL will be responsible for updating and maintaining the information about the Snowdon Aviary and London Zoo's heritage around site and will continue to keep this updated through regular reviews as outlined in the Management and Maintenance Plan
c) Details of the project and the works will be released via the Press team at ZSL at appropriate times. In addition the Digital Team will be responsible for maintaining information on the ZSL website.

d) A site development plan is required for London Zoo and this will be led by the Directors to identify future areas of development including how heritage buildings should be protected and incorporated into plans.
e) A Design and Access statement should highlight all areas of importance that are to be maintained and this should be provided to Contractors when they tender for the scheme.
f) As the building is listed, it is a requirement that we apply for consent before any alterations and that consult with statutory bodies.
g) Evaluation with our audiences will be carried out before, during and after the project and this feedback should be communicated to all members of the project team.

7. Adoption and Review

The main owner of the Conservation Plan will be the ZSL Projects Team who are responsible for managing all projects on site including minor maintenance and large new build projects. This team is best placed to ensure that the heritage is maintained and respected during any future works and are in a position to update the information contained with this document.

ZSL has had a Conservation Plan for the entire site in place since 2001. This is regularly referred to before any project work takes place and is a useful source of information. Individual Conservation Plans are not normally created for projects however, with the implementation of a Conservation Plan for the Snowdon Aviary, it is recommended that this approach is taken on future projects.

Copies of the plan will be kept at the ZSL Library and on site with the ZSL Projects Team – both electronically and in paper copies. The electronic version will be distributed to all members of the project team including architects, structural engineers, contractors and landscape designers to inform their design process. In turn, information the design team have gathered whilst developing their design will be used to update the plan. The Outreach and Partnerships Officer and the Interpretation Team will evaluate feedback on the Snowdon Aviary project and this will be used to inform future versions of the Conservation Plan.

8. Bibliography

The following sources of information have been used to write this Conservation Plan as well as those appended to this document and some informal records held within the ZSL Library. In addition the Zoological Society of London's website has a wealth of current information about the heritage at London Zoo.

Engineers and Architects: Newby + Price. (1994). *AA Files no. 27, Summer*, 25-32.

Hardingham, S. (2017). The New Aviary, 1960-66. In *Cedric Price Works 1952–2003: A Forward-minded Retrospective* (pp. 86-91). London: Architectural Association.

Milmo, C. (2015). *Cedric Price: The most influential architect you've never heard of*. Retrieved July 17, 2016, from Independent: http://www.independent.co.uk/arts-entertainment/architecture/cedric-price-the-most-influential-architect-youve-never-heard-of-9852200.html

Purcell Miller Tritton & Colson Stone Practice. (2001). *Zoological Society of London Regent's Park Site Conservation Plan Volume Two (Gazateer).* London.

Purcell Miller Tritton & Colson Stone Practice. (2001). *Zoological Society of London Regent's Park Site Conservation Plan: Volume One.* London.

9. Appendices

Appendix A - Listed Building Plan
Appendix B - Building Condition Survey
Appendix C - Tree Survey
Appendix D - Ecology Report