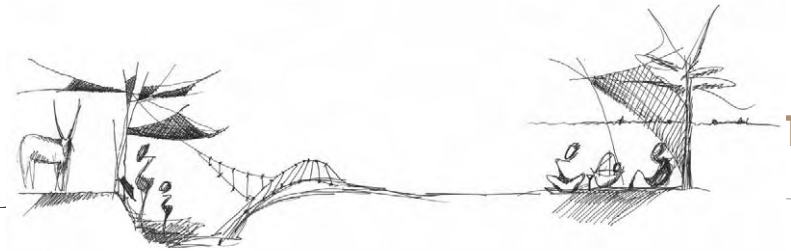


TECHNICAL INVESTIGATION TREATISE

6.1. AN ANIMAL PRECINCT

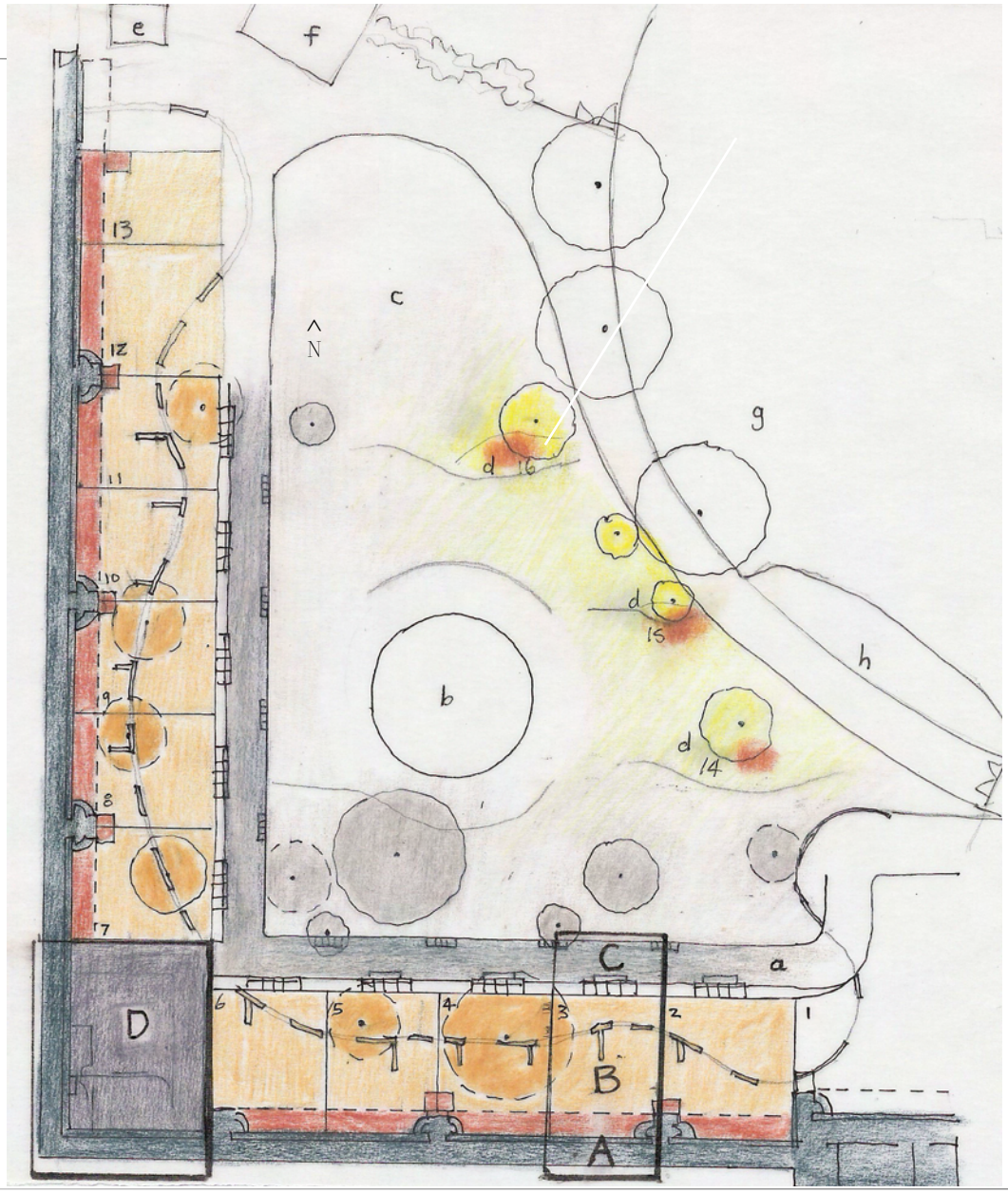
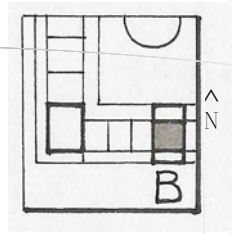


Figure 148. *Plan of new Parrot Animan Precinct Scale 1:500,*

A – New Service Passage
B – Protected Bron–necked Parrot Habitat
C – Experi–path
D – Discovery Haven

a. Experi–path.
b. Sammy Marks Foundation.
c. Sloped Picnic and demonstration lawn.
d. Open–air Parrot Habitat and visitor bench.
e. Proposed ablution block.
f. Cable car house.
g. Existing Antelope Habitat.
h. New proposed Experi–path.

1. Proposed land bird habitat.
2. Mixed species breeding enclosure.
3. Brown–neck parrot.
4. Little Corella.
5. Yellow streaked Lory.
6. Abbott's yellow crested cockatoo.
7. Scarlet Macaw.
8. Major Mitchel's cockatoo.
9. Blue–fronted Amazon.
10. Illiger's Macaw.
11. Sulphur crested cockatoo.
12. Blue and Gold Macaw.
13. Cape Parrot.
14. Blue–throated Macaw.
15. Citron–crested cockatoo.
16. Blue–throated Macaw.



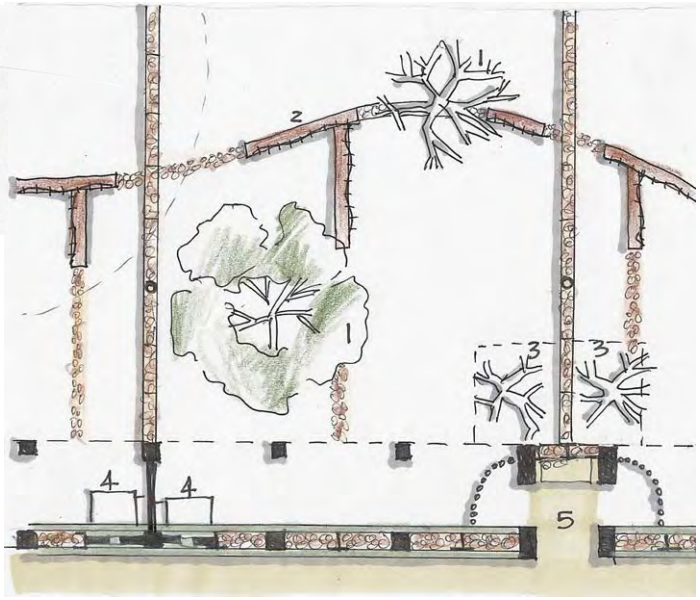


Figure 148. Plan of the Brow-necked Habitat. 1 - New trees; 2 - Existing walls with perch structure; 3 - Shading structure; 4 - Feeding and Perching Zone; 5 - Breeding Zone; 6 - Preparation and Monitoring Zone.

6.1.1. Animal Inhabited Spaces:

6.1.1.1. Protected Parrot Habitat

(a) The Structure

• *Shape.* The shape of the structure encourages birds to perch at lower levels towards the front of the enclosure. The choice of an organic form allows easier movement for birds. The structure's shape is similar to that of the covered pathway under which humans travel. The similarity of the shape and materials (curved steel members) used in the human walkway and the Protected Habitat develops a notion that the human space is another version of the birds' space. Visitors can understand that the Protected Habitats are useful structures and not cage-like and limitingThe skeleton is made up of the above mentioned circular hollow curved steel members and cross members onto which diamond mesh is attached. Steel cables further support the mesh. Dividing each Habitat is a system of vertical circular hollow steel members connected to a strip of welded mesh stone-filled baskets. Mesh is drawn up the side of the steel member.

• *Materials.* Steel members add a technical finish and form the skeleton onto which diamond mesh is attached. The members connect to the roof of the Service Passage (see section7, drawing A1, 2), and to the retaining wall infront of the Protected Habitat.

(b) The Services. Irrigation supply pipes extend above every second curved skeleton member at the division of each Habitat, and further extend into each enclosure. These pipes supply water to irrigate plants but also to (when in drip-mode) drip from points in the pipe onto a concrete channel, built in place of the demolished low walls (see section 7, drawing B8). The dripping water will provide a place for birds' to clean and groom themselves.

(c) Birds required spaces

• *Flying.* The increse of space from the previous enclosures encourages more bird movement aiding muscle development (see figure 149)

• *Feeding.* Feeding trays (in each habitat) are stainless steel, bent to avoid sharp edges. The trays are longitudinal as opposed to the round metal bowls placed on metal perch surfaces. The choice of this shape aids in camouflaging the form of the tray amongst the

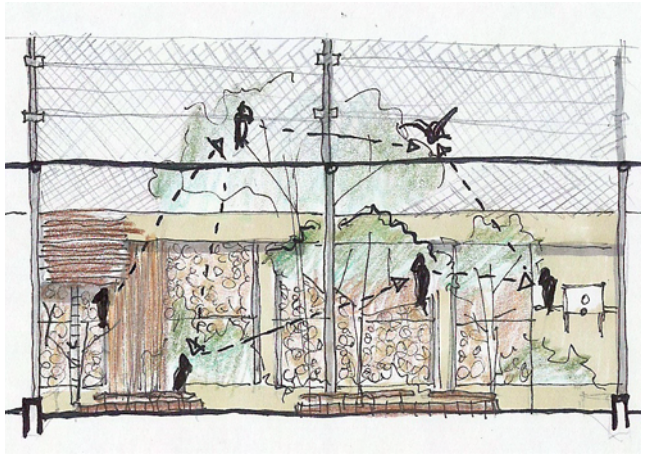


Figure 149. Protected Habitat Bird Movements

perch branches and surrounding perches. The trays rest on rods mounted to the steel wall support structure with steel angles. Two peg type attachments provide sufficient support inside the Service Preparation Zone to withstand the forces of birds pecking and sitting on it. The tray can slide in and out of the Habitat through the welded mesh strip in the Service Passage wall, thus making it easy to clean, and refill. A shade element above the feeder tray is of a steel bent frame with a waterproof metal sheet cladded with Sickle-bush branches. This element (and the surrounding trees) shade the feeder tray from sunlight, rain, and bird faeces (see figure 150). The curved profile shape of the shade element is unaccommodating, should birds want to perch on it (see section 7, drawing B5, 6 and 8).

• *Nesting or breeding.* The position of the breeding boxes is towards the back of the enclosure, covered by a concrete roof overhang, and flanked by a concrete wall barrier (wood trowelled and painted with natural liquid Sand Paint, colour warm sand). These intimate warm protected areas of the enclosures are the quietest sections of each Protected Habitat. Breeding boxes of different sizes have perch branches connected to the boxes and the adjacent wall.

• *Resting .* New trees are to be of a shape with a wide canopy and many branches throughout the height of the tree. Perch spaces include live trees; dry perch trees; and steel supported Sickle-bush branche structures. Sickle-bush branches are placed at different heights and distances (but not too close to the boundary mesh) and are attached to parts of the remaining existing low walls (cleaned) to curved hollow steel supports (see section 7, drawing B8). Visitors are given the opportunity to view animals that will perch in different positions due to the variety of perch spaces made available (see figure 151). Sections of the existing low walls are to be demolished and replaced with pebbles in rememberence of the old enclosures. Visitors can view that the new Protected Habitat are more accommodating in size.

• *Cleansing.* The demolished sections of the dividing walls (where not substituted with pebbles) are replaced with a concrete channel into which irrigation is controlled to drip, providing the birds with a place to clean themselves. The concrete channel can be easily cleaned and disinfected daily (see section 7, drawing B8).

• *Protection.* Birds can hide behind the vegetation for protection, and

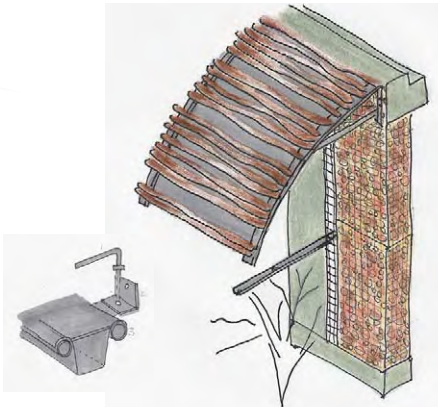


Figure 150. Shading structure and Feeding Tray.1 – Stabilization; 2 – Wall brackets; 3 – Rod supports. (See section 7, drawing B6)

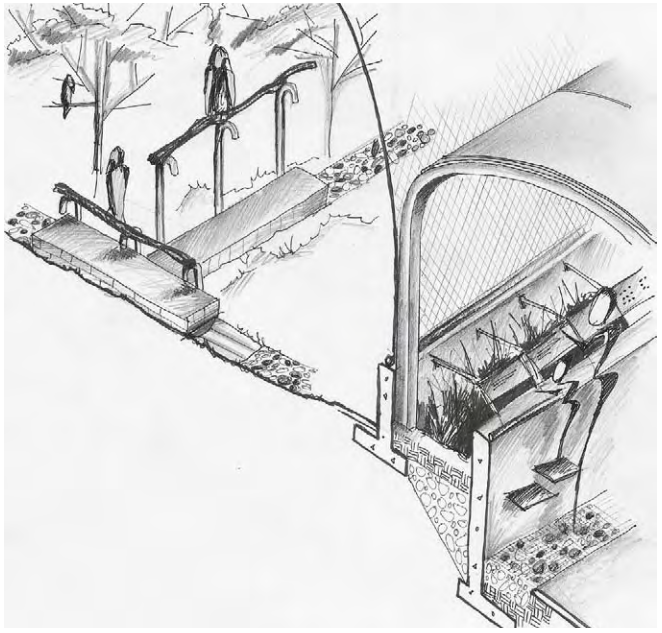


Figure 151 . *Experi-path and Protected Parrot Habitat.* Forms, materials, and textures are repeated in animal and human habitats.

visitors can find it an adventure to spot them. The harder it is to spot the animal, the less the visitors may feel sad about its environment.

6.1.2. Management occupied Spaces:

6.1.2.1. Service Passage

The passage in its linearity allows easy quick passage for the keepers to access each enclosure. The existing backwall is restored and the rest of the top removed, cleaned and topped with a mortar topping. A gap between a new cantilevering concrete roof and the existing wall is filled with steel circular sections and expanded metal. This allows light and air in, but keeps unwanted animals out (see figure 153). Should any parrots escape into the passage, the expanded metal and the Service Passage main entrance will ensure birds do not escape into the open. The floor of the Service Passage is sloped to drain water to an external concrete channel. Existing wheepholes in the existing back wall will allow water passage out into the channel behind the back wall. The existing concrete floor is wood floated, and resealed with particle enhanced epoxy for an extra slip proof texture. Gratings covering extra drainage pipes also lead to the external concrete channel. The new wall structure between the Service Passage and the Protected Habitats (see section 7, drawing A1, 2, 3) is composed of a series of concrete columns (painted with liquid Sand Paint colour – warm sand) on a concrete footing (also painted with liquid Sand Paint and sealed with a Protecta Plus sealer). Concrete footings have wheepholes to drain water when the enclosures are being cleaned. Steel angle columns are raw bolted to the concrete columns and concrete footing to act as support for welded mesh stone–filled baskets. These baskets are then welded and bolted to the steel columns (see figure 154). This stone basket wall infill system aims to steer away from traditional solid masonry construction used in Service Passages throughout the Zoo. The objective is to border the back wall of the enclosures with natural stone and not masonry (which has house building connotations). The system also allows for easy adaptability should changes need to occur.

The roof extends over a section of the Service Passage, over the new wall structure and overhangs into the Habitats. A rise in the roof overhang supports the Habitats' enclosing steel skeleton

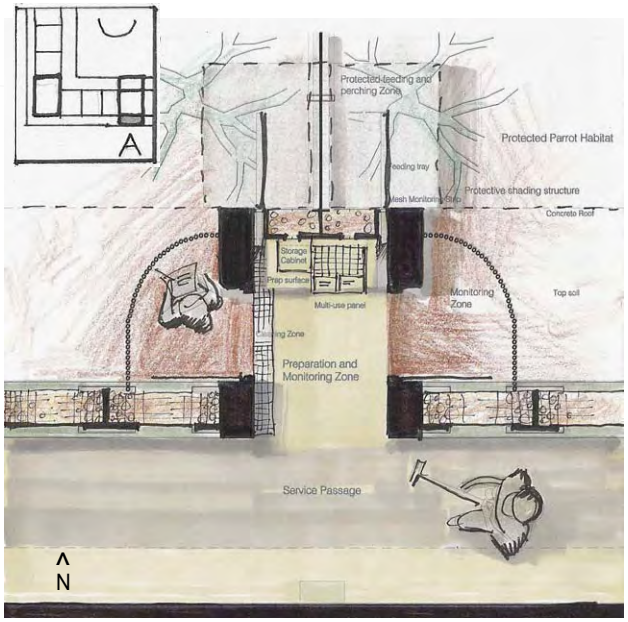


Figure 152 . *Plan of the Preparation and Monitoring Zone,* Service Passage. (See section 7, drawing A).

Figure 153 .Service Passage.

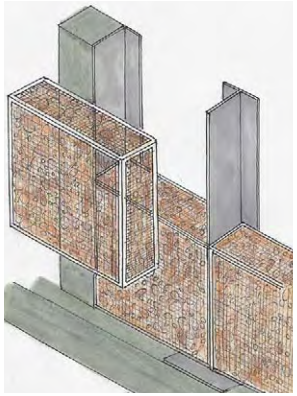


Figure 154. *Structured Wall System.* Welded mesh stone–filled baskets are fixed to steel columns and concrete columns (see section 7, drawings A1 and 2).

members and diamond mesh. The roof is sloped from two sides down to the middle of its width where water can drain into a down pipe set into the concrete columns and footing. It extends out of the concrete footing to drain into the Service Passagee (section 7, drawing A).

(a) Service Passage Preparation and Monitoring Zone.
Food prepared at the Service Block's Main Animal Food Preparation building is dropped off at the Main Parrot Food Preparation Area in the Service Passage. The zoo keeper can check the Main feeding Schedule board as he or she enters the service passage, and then take the correct food from the Main Parrot Food Preparation Area to the specific enclosures' Preparation and Monitoring Zone. Here the feeding tray can be cleaned and the food and water placed inside. This Preparation and Monitoring Zone is a multi-use area, with a Multi-use Unit; a Preparation Surface; a Storage cabinet; Monitoring space, and a Cleaning Zone.

The orientation, height and layout of the Preparation and Monitoring zone avoids frontal opening of doors into the enclosure and minimizes zoo keeper intrusion. The new wall support structure and welded mesh stone-filled basket system forms the boundary of this zone.

- *Multiuse Unit.* A steel frame panel of welded mesh is designed to require unlocking at one place only, and with the use of tracks and guides, it slides open to expose the Preparation Surface and open the Mesh Storage Cabinet (see figure 156). Tracks fixed at the top of the panel, and at the middle under the table surface allows movement, as well as guides running on the edge of the preparation surface. Roller wheel guides with a guide strip attached to the concrete floor retains the lower half of the panel's horizontal movement. The nature of the welded mesh infill allows a clipboard to be attached on the front for data recording. The profile of this panel is ergonomically shaped to support these functions and allow the keeper leg space and arm resting space while recording. A welded mesh paper tray fixed to the back of the panel provides storage for recorded data, close to the recording space, and underneath the preparation surface (see section 7, drawings A5,6,7).

- *Preparation Surface.* The surface is a 30mm hardwood base with a melamine coated surface easy to clean and is attached to the steel columns with angles bolted to both the table surface and the steel column (see section 7, drawing A5).

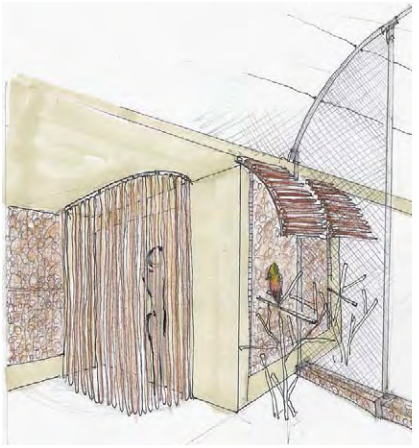


Figure 155. *Preparation and Monitoring Zone*

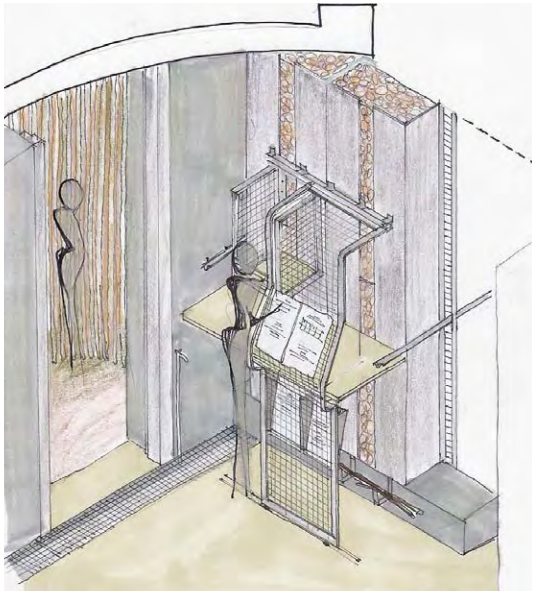


Figure 156. *Perspective of the Preparation and Monitoring*

• *Mesh Storage Cabinet.* A steel framed cabinet with welded mesh border planes has no separate cabinet door, instead, as the sliding mesh panel is unlocked, the storage cabinet is made accessible. The mesh allows easy monitoring and cleaning of storage (see section 7, drawing A5).

• *Sickle-bush perch branches and feeding tray storage.* Steel angles are attached to the concrete footing offering extra storage space for perch sticks and feeding trays. The storage space is not enclosed, and is thus easy to clean and monitor (see section 7, drawing A5).

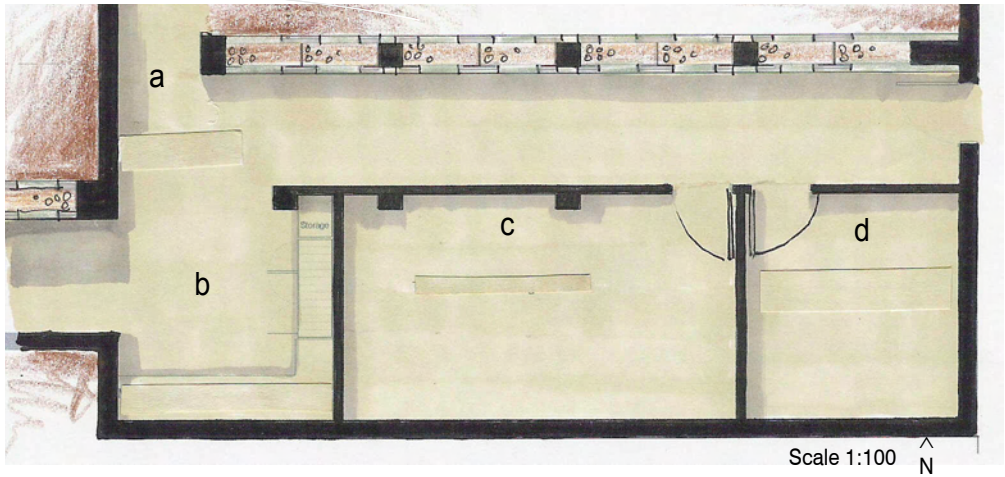


Figure 157. Plan of administrative spaces (see section 7, New Plan). a – Main Parrot feeding Schedule Zone; b – Main Parrot Food Preparation Zone; c – Training and Meeting Office; d – Breeding and Conservation Office.

• *Monitoring Zone.* Between the Habitats' access doors and each Habitat there is enough space for the zoo keeper or curator to enter and close the door while remaining hidden behind heavy suspended sisal ropes. The ropes are threaded over a horizontally curved steel member (bolted to the concrete soffit) and the rope overturn is clamped. This prevents birds from escaping. The use of natural sisal ropes avoids injury, should the bird get frightened and brush past the ropes when the keeper enters. The ropes allow keepers to monitor the enclosure without having to be inside the Habitats. Visitors are also less unlikely to see a human in the birds' Habitats. The overhang shades the area around the rope bordered zone, and this makes it difficult for birds to view the keepers as it is a darker space.

• *Cleaning Zone..* The floor of the Preparation and Monitoring Zone is finished similar to the rest of the passage – wood floated, and resealed with particle enhanced epoxy for an extra slip–proof texture. There is a water supply tap and built–in channel in the ground with a steel grating cover to drain the feeding tray waste and other refuse (see section 7, drawing A5).

6.1.2.2. Breeding and Conservation Office

There is a space dedicated to administrate the new = Parrot Animan Precinct, provided with a space for office equipment and data archiving. The parrot curator's main office will remain at the Main Administration Block of the Zoo.

6.1.2.3. Training and Meeting Office

A new Training and Meeting Office space is provided, and will cater for classes and training or meetings that need to take place.

6.1.2.4. Main Parrot Food Preparation Zone

One Main Bird Food Preparation Zone provides a main area for food drop off (from the Main Animal Food Preparation Building). This new zone has a preparation surface, and additional equipment storage that can facilitate preparation of food. Enrichment food and play props can also be prepared here, as there is also water services provided.

6.1.2.5. Main Parrot-feeding Schedule Zone

Upon entry of the Service Passage, a feeding and maintenance schedule wall provides easy schedule checking and recording. This area zone is close to the Main Bird-feeding Preparation Zone for practical purposes.

6.1.3. Visitor occupied Spaces

6.1.3.1. 'Experi-path'

The Experi-path is a depressed walkway running alongside the protected enclosures. The change in level is to highten visitors' psychological states. It facilitates walking, learning, and relaxed viewing for different ages of visitors, as well as for the disabled (mentally or physically, partially or fully incapacitated). The depth of the path places the visitor at an inferior position, and also allows viewers at higher levels and further distances to see above the signage and other viewers. (See section 7, drawing plan C). The roof structure of the Haven is a lightweight Shade Structure of similar materials and techniques used for the Experi-path Shade Structure. Curved and cross mild steel members form the skeleton for the meranti strips onto which canvas is tensioned and stapled. The mild steel members are connected to the rise of the adjacent Service Passage concrete roof.

(a) Floor. The surface of this pathway is filled with stones collected on site. Strips of welded mesh, covering the stones form the edges along the pathway. The strip running along the opposite edge are made with the same materials and define the paths' Relax Zone. The strip closest to the enclosure defines the Learn Zone. In between the above mentioned baskets a concrete floor slab placed over compacted ground defines the Walk and Watch Zone. It overlaps under the Relax Zone to provide a rough level surface onto which one can firmly lift off when changing one's position. The concrete surface is wood float finished and tinted to the Sand Paint colour Warm Sand with a product Dry Shake (a cementitious tint). A Protecta Plus Sealer with UV Protection is used to seal the concrete. A textured strip runs along the length of this concrete pathway. Rubber prints are pushed into the cement to obtain a textured shape, and then removed. This strip is painted and also sealed with the Protecta Plus sealer, and defines the Guiding Zone. This zone guides visually impaired visitors along the enclosures. The strip moves across to the seating on the one side, and to Braille information panels on the other side. It also moves

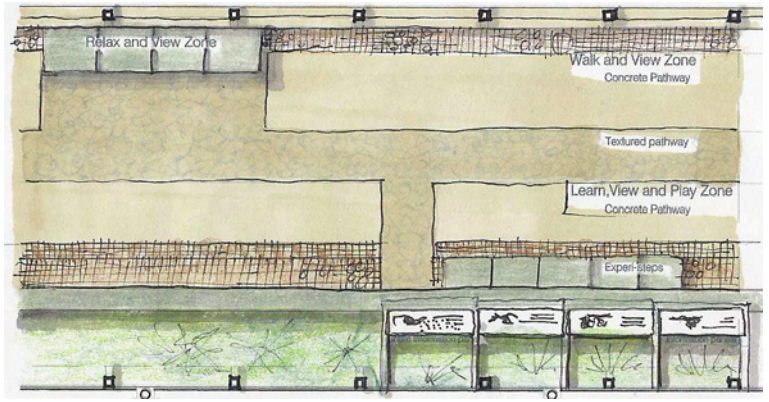


Figure 158. Plan of Experi-path (see section 7, drawing C1). Scale 1:100

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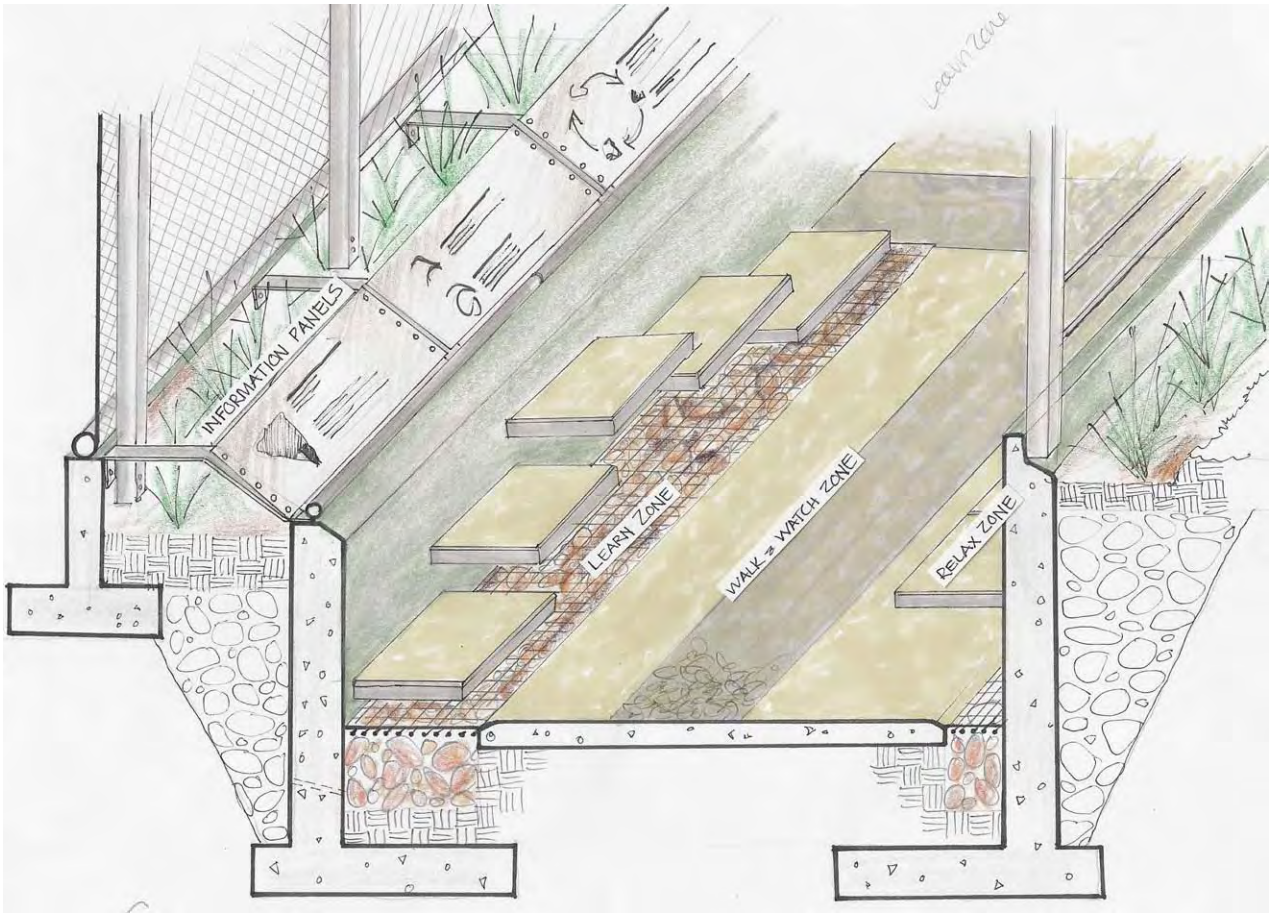


Figure 159. *Experi-path.* Zones are defined with materials, texture and form (see section 7, drawing C2).

into, and out of the Discovery Haven. This textured floor strip moves towards the picnic zone and also connects to the main circulation path out of the Parrot *Animan* Precinct (see figure 159 and section 7, drawing C1).

(b) The Learn Zone.

This zone is compromised of steel tray steps filled with textured screed (to 50mm). The use of male/female connections from the trays into the concrete provide support for the textured Experi-steps. These steps allow small children to elevate themselves to different viewing positions, and to view the information panels at a suitable height. Diagrammatic

vinyl-printed information is bonded to sheet metal. The metal is mechanically fixed to two steel frame members that are bolted to the two retaining walls. These information panels are placed at an angle for easy viewing and quick comparison of information to the live birds (see section 7, drawing C1).

(c) The Relax Zone. Screed-filled steel trays are attached onto the retaining wall with male-female connecting tubes. The cantilever position ergonomically allows seated people to push themselves off the ground (see section 7, drawing C1).

(d) Walk and Watch Zone. This zone is wide enough for families or guided tours which usually take place in groups of 10. The floor finish also helps to guide excited school children, keeping their movement somewhat organized (see section 7, drawing C1).

(e) Services. A drainage pipe runs between the mesh basket strips in the Learn Zone, to the strips in the Relax Zone, under the concrete Walk and Watch Zone, to be channelled away (see section 7, drawing C1).

(f) Shade Structure. The covering structure is shaped to allow intimate viewing, weather protection and drainage. Bent mild steel sections (70x70) are connected to two retaining walls on either side of the Experipath at every 1.2m (see figure 161). Cross members at every 500mm centres keep stability in the structure and supports the canvas. Meranti strips are screwed to the top of the mild steel section. Canvas is then tensioned at four sides and stapled to the Meranti strips and covered with Rubber strips. This simple lightweight structure does not distract viewers from their surroundings as the other viewing platforms at the Zoo do. The canvas only covers (width way) the signage panels, and extends over to cover the seats on the opposite side of the Experipath. Sections not covered bythe Canvas allow views, light, and air passage in the Experi-path.

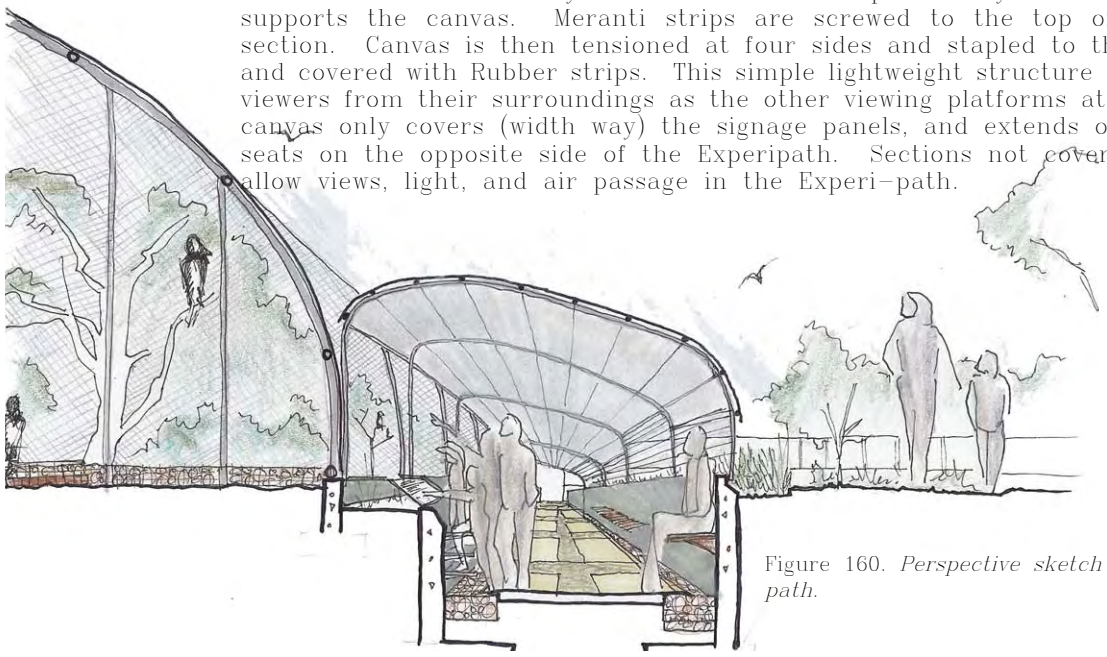


Figure 160. *Perspective sketch of the Experi-path.*

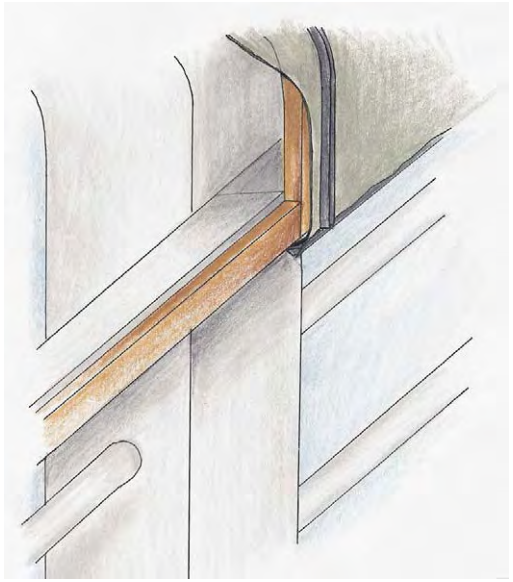
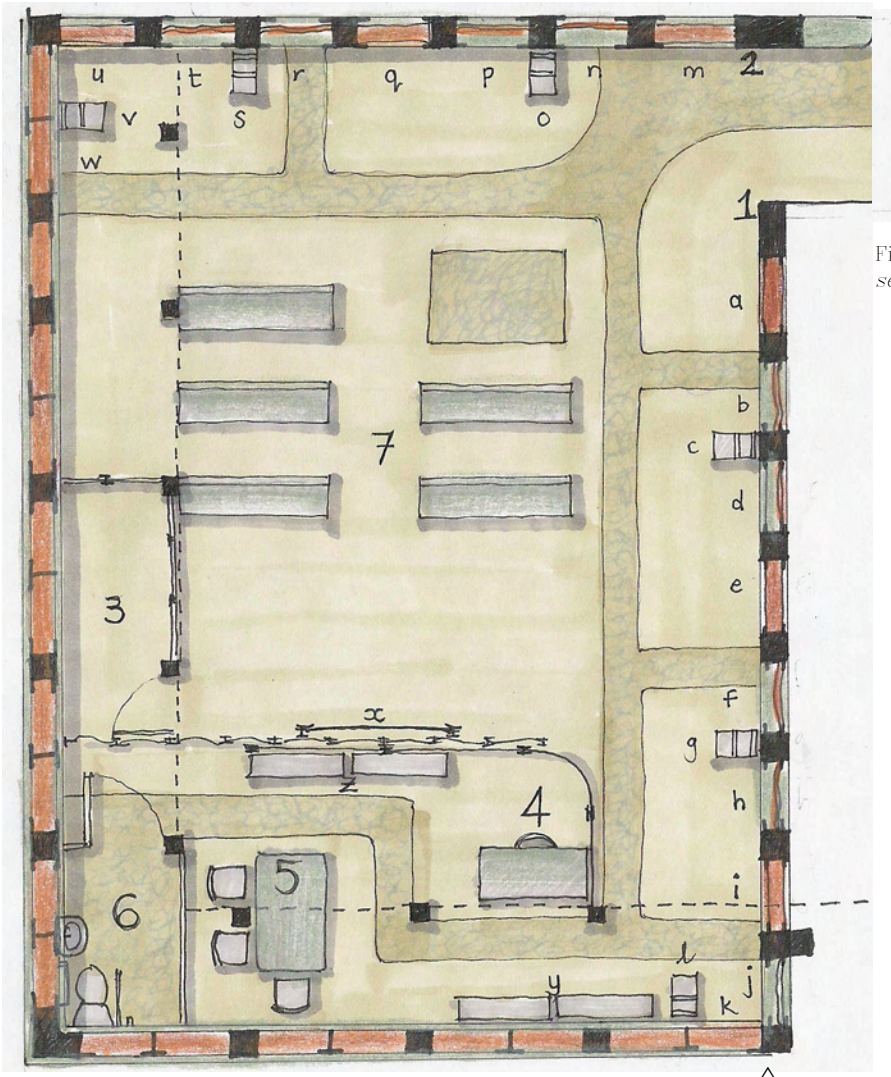


Figure 161. *Experi-path Shade Structure Detail.* Mild steel members support meranti strips onto which canvas is tensioned and stapled (see section 7, drawing C3).

6.1.3.2. Discovery Haven

The Discovery Haven forms a hidden climax in the discovery of the site. It is a place where visitors can learn different species and ecological information via different medium. This Haven is comprised of a quiet Reading Zone in a Literature Archive; interactive Information Walls, and a video projection and viewing space (see section 7, drawing D1).



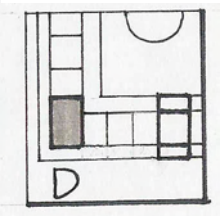


Figure 162. *Plan of the Discovery Haven (see section 7, Plan D).*

a. Information (Habitat 1,2)
b. Braille Information (Habitat 1,2)
c. Interactive Touchscreen (Habitat 1,2)
d. Hidden Viewpoint
e. Information (Habitat 3,4)
f. Braille Information (Habitat 3,4)
g. Interactive Touchscreen (Habitat 3,4)
h. Hidden Viewpoint
i. Information (Habitat 5,6)
j. Hidden Viewpoint
k. Braille Information (Habitat 5,6)
l. Interactive Touchscreen (Habitat 5,6)
m. Information (Habitat 7,8)
n. Braille Information (Habitat 7,8)
o. Interactive Touchscreen (Habitat 7,8)
p. Hidden Viewpoint
q. Information (Habitat 9,10)
r. Braille Information (Habitat 9,10)
s. Interactive Touchscreen (Habitat 9,10)
t. Hidden Viewpoint
u. Information (Habitat 11,12)
v. Interactive Touchscreen (Habitat 11,12)
w. Braille Information (Habitat 11,12
x. Projected Displays
y,z. Literature Archive – Printed literature resources shelves.

1,2. Information Wall.
3. Media Storage
4. Literature resources management.
5. Reading Zone.
6. Ablutions
7. Seating Zone.

(a) Structure. The Discovery Haven is on the same level as the Experi-paths. The structural wall system is comprised of concrete columns on a concrete footing that acts as a retaining wall to adjacent enclosures. Steel angle columns are bolted to the concrete and infilled with alternating elements (welded mesh stone-filled baskets, and wire mesh in a steel frame connected between steel angle columns followed by Sickle-bush branches attached horizontally to the steel columns). The use of stone filled baskets links the natural surroundings with the new structure. It also avoids the use of typical solid construction, and instead uses welded mesh. The other infills of wire mesh Sickle-bush branches are for hidden viewing and this allows air passage, but hides the viewer in a the dark Haven (see figure 164, and section 7, drawing D4,5,6).

(b) Interactive Discovery Walls. Printed vinyls glued onto metal panels are easy to fix to metal frames and then onto the structural wall system (concrete columns and steel angle columns). They are positioned at angles that facilitate easy reading. Braille panels are provided at lower heights (see figure 163, and section 7, drawing D43,4,5,6).

(c) Literature archive. Currently the only archive of books, magazines and journals is at the Frank Brand Administration building. The materials in this small library are inaccessible to the public and special permission is needed to enter. People could aquire more information about animals if literature holdings were spread around the zoo iinstead of at one small library at an administration building, or at the library at a proposed Life Science Discovery Centre. Lightweight partitions defining the Literature Archive include a Sickle-bush Partition, and a welded mesh partition (both with steel frames (see section 7, drawing C6,7)

(d) Display Projections. People are drawn to informative sound, and this type of information can be necessary for visually impaired visitors. The space is open to allow visitors to walk in and sit as they please. Visitors can watch educational footage while comparing information panel content, and watching the animals through the wall structures while they are covered ahead. The Frank Brand Hall is used for educational lectures and displays, but more spaces can accommodate lectures and visitor accommodation. Special exhibitions (parrot week, or weeks for the blind) can vary due to the open plan and space adaptability of the Discovery Haven.

(e) Interactive Touchscreens. These tools are necessary to stimulate young minds in the current age of technology. This type of information can enhance learning with playing.

(f) Office. The management offices are a great distance from the habitats. An office at this Precinct can store important written material (books, records, schedules) needed by curators.

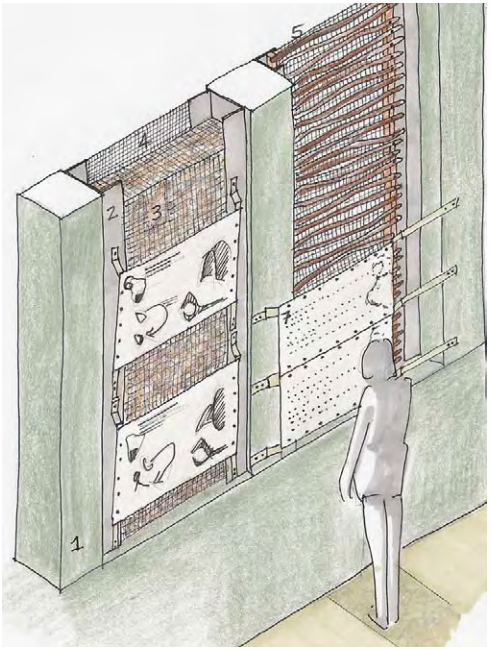


Figure 163. Structured Wall Systems. Welded mesh stone-filled baskets are fixed to steel columns and concrete columns (see section 7, drawings A1 and 2).

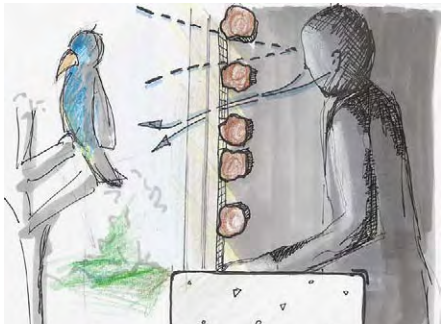


Figure 164. Hidden Viewpoints, Discovery Haven. Sickle-bush and welded mesh backing are positioned to provide sensory experiences for visitors.

(g) Services. Direct spotlighting is needed for the information panels, but the Discovery Haven should be kept as dark as possible (for projections to be clear, and for the animals not to view the hidden visitors). One ablution facility is provided, inconjunction with the New Proposed ablutions in the Precinct

6.1.3.3. Service Areas

Water points will be provided for picnic use. There is a proposal for a New Ablution block in the Precinct.

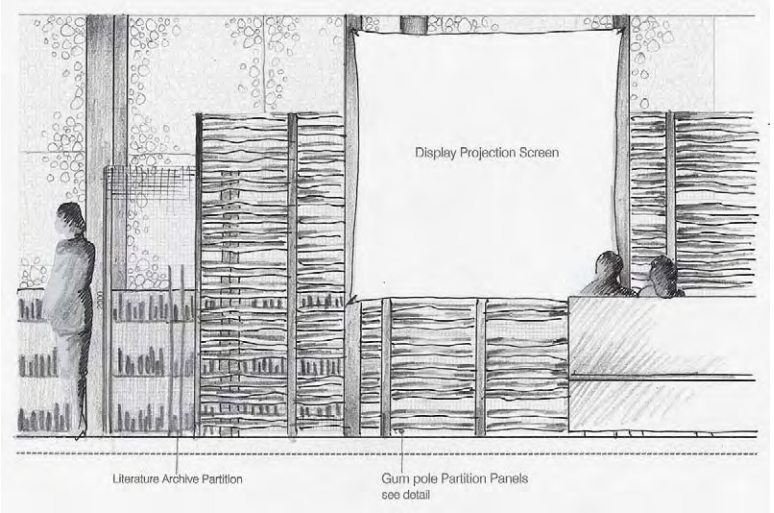


Figure 165. *Discovery Haven Partitions.* Gum–pole and welded mesh partitions claim the Literature Archive (see section 7, drawings D1, 2, 7 and 8)

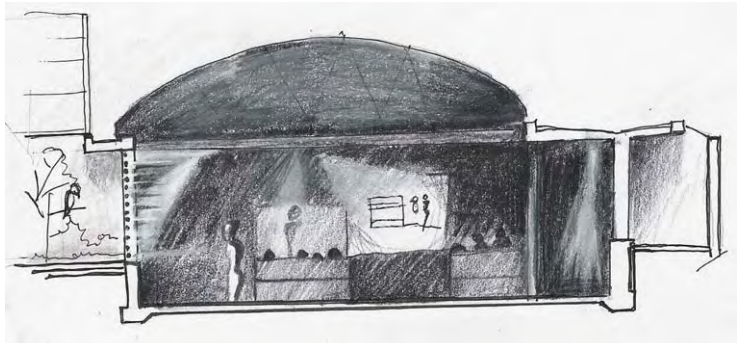


Figure 166. *Lighting,* Discovery Haven.

6.1.3.4. Summary of Accommodation Provided

Table 3. *New Management and Visitor Accommodation*

	Circulate	Eat	Rest	Ablution (less than 50m)	Protection	Learn	View	Play	Work – record /monitor	Work – cleaning / prepara–tion	Storage
Management	√	-	√	√	√	√	√	-	√	√	√
Visitors	√	√	√	√	√	√	√	√	-	-	-

Figure 167. *Discovery Haven, Perspective drawing.*

6.2. LEGAL ASPECTS

This project must be seen as a capital expenditure project, all contractual aspects of this Parrot Animan Precinct design will be delt with as per existing municipal regulations and procurement policies. The possibility exists for Public Private Partnership or sponsorship. The introduction of a direct procurement for this project will be undertaken on the basis of a public tender in order to demonstrate not only the value of such a project but transparency throughout. All current expenditure i.e. the day to day running of the enclosure can be amortized against: events; educational tours; entrance fee at the Precinct; demonstrations; interactive tours; educational courses; hiring of an open-air events space.

The real return of investment will be twofold, firstly in terms of the added value and enhancements to the overall appearance of the zoo, and secondly from the added visitor and public interests from this Precinct. In real revenue terms, it would be expected that this Precinct will be profitable as a section of the zoo within a period of 10 years, and this is based on visitors, purchases, and added attraction as against initial purchase and maintenance for the given period. Replacement and facelifts for this enclosure are envisaged after year 5 to 15. The aim is to provide a financially viable project with a minimum life-span of 20 years. The project is both scalable and financially viable.

The Civil and horticultural department of the Zoo (headed by Mr. D. Moodley) will develop and manage the construction.

6.3. ECONOMIC ISSUES

The new development will use local skills and materials. Simple lightweight shading structures are labour intensive for unskilled laborers. Welded mesh, concrete, stone-filled baskets, diamond mesh are low maintenance materials. Stones for the welded mesh baskets can be collected on site.

6.4. ADAPTABILITY AND FLEXIBILITY

The open-plan nature of the Discovery Haven can allow the space to be hired out for different functions. This will help sustain the project. The flexibility of the wall systems, (Service Passage and Discovery Haven) allow for future changes. Experi-path and Discovery Haven Shade Structures are lightweight and can be easily dismantled. The Protected Habitats steel frame can also be easily dismantled. The Stones occur in abundance at the Zoo, and require no manufacturing.

6.5. VENTILATION AND LIGHT

In the Discovery haven the use of welded mesh panels in the wall system allow light and air passage. Light is kept to a minimum to keep the space dark for hidden viewing and display projection viewing. The Service Passage roof aperture allows light and air penetration. The Experi-path Shade Structure is of a shape to maximize views and protect visitors. The Protected Habitats roof overhang and shade structure shade and protect breeding and feeding zones.

6.6. ACCOMMODATION SCHEDULES

Table 4. *Protected Habitat Accommodation Schedule*

No.	Space name	Activity and use spaces	Max Birds	New Size	Original Size	Equipment	Services	Finishes
1	Protected Parrot Habitat							
			Two	236m³	160m³			
		Flying						Unexposed mesh
		Feeding		Perch trees	Table - 0.32m²	Feeding tray	Clean water and food	Metal tray with bent edges
				Feeding Tray -0.5 m²	Bowl - 30mmØ	Shading structure	Water for cleaning trays	
						Perch trees		
		Nesting/ breeding		0.15m³	0.15m³	Breeding Box		
						Perch sticks		
		Resting		New Perch trees and perch structure		Perch structure		Hard Sickle-bush branches, treated
					0.2m²	Perch trees (dead existing, and new)		
		Cleansing		600mmx230mm Bath	-	Concrete bath	Clean water for grooming	Sealed for easy maintenance
		Protection (weather)		Concrete roof - 27.5m³	Concrete roof - 31.7m³	Protective mesh structure	Concrete floor and top soil cleaning	Sickle-bush sticks on structure to be treated.
				Shade structure – 1.3m³		Shading structure		Metal panel with bent edges to protect food from weather and contamination
						Concrete roof		
						Vegetation visual barrier		

Table 5. *Management Accommodation Schedule.*

No.	Space name	Sub-spaces	Max People	New Size	Original Size	Equipment	Services	Illumination	Finishes
1	Management Spaces								
		Service Passage	5	305 m^2	271 m^2	Perch stick storage br	Water supply and storage	Flourescent lighting system	Concrete and welded mesh materials
		Preparation & Monitoring Zone	2	6 of 4 m^2	-	Perch stick storage brackets; storage cabinet; multi-use unit; data storage	Water supply and storage	Flourescent l.s.	Concrete, and welded mesh materials
		Breeding and Conservation Office		8.1 m^2	-	Storage, furniture, data storage	Electricity points and illumintaion	Flourescent l.s.	-
		Training and Meeting Office		15.6 m^2	-	Storage, furniture, educational equipment	Electricity points and illumintaion	Flourescent l.s.	-
		Main Parrot Food Preparation Zone		5 m^2	3 of 1 m^2	Storage, WB		Flourescent l.s.	-
		Main Parrot Feeding Schedule Zone		7.5 m^2	-	Schedule board		Flourescent l.s.	-

Table 6. *Visitor Accommodation Schedule.*

No.	Space name	Sub-spaces	Occupancy Class	Max People	New Size	Original Size	Equipment	Services	Finishes
1	Visitor Spaces								
		Experi-path	A5	2pp/3m²	2512m width	-	Steps, seats, signage panels		Concrete and welded mesh; canvas for roof
		Discovery Haven	C1	50-60	118.6m²	-	Signage, furniture	Information, ablution	Concrete, sickle-bush
									Welded mesh
									Canvas for roof
		1. Media Storage	J3	3	33m²	-	Shelves, cupboards		
		2. Literature Archive	J2	5	1908m²	-	Book shelves		Welded mesh and sickle-bush materials
		3. Reading Zone	J2	4	6.25m²	-	Tables, chairs		
		4. Ablution		1	3.6m²	-	WC, WB, handrails	Water supply	
		5. Display Projection . and Seating Zone	C1	30	33m²	-	Display screen, seating		Guiding textured floor pattern