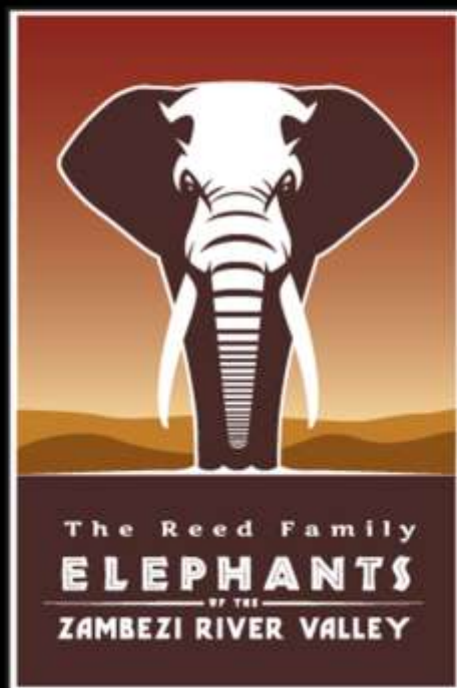


## **New Exhibit Opened May, 2016**

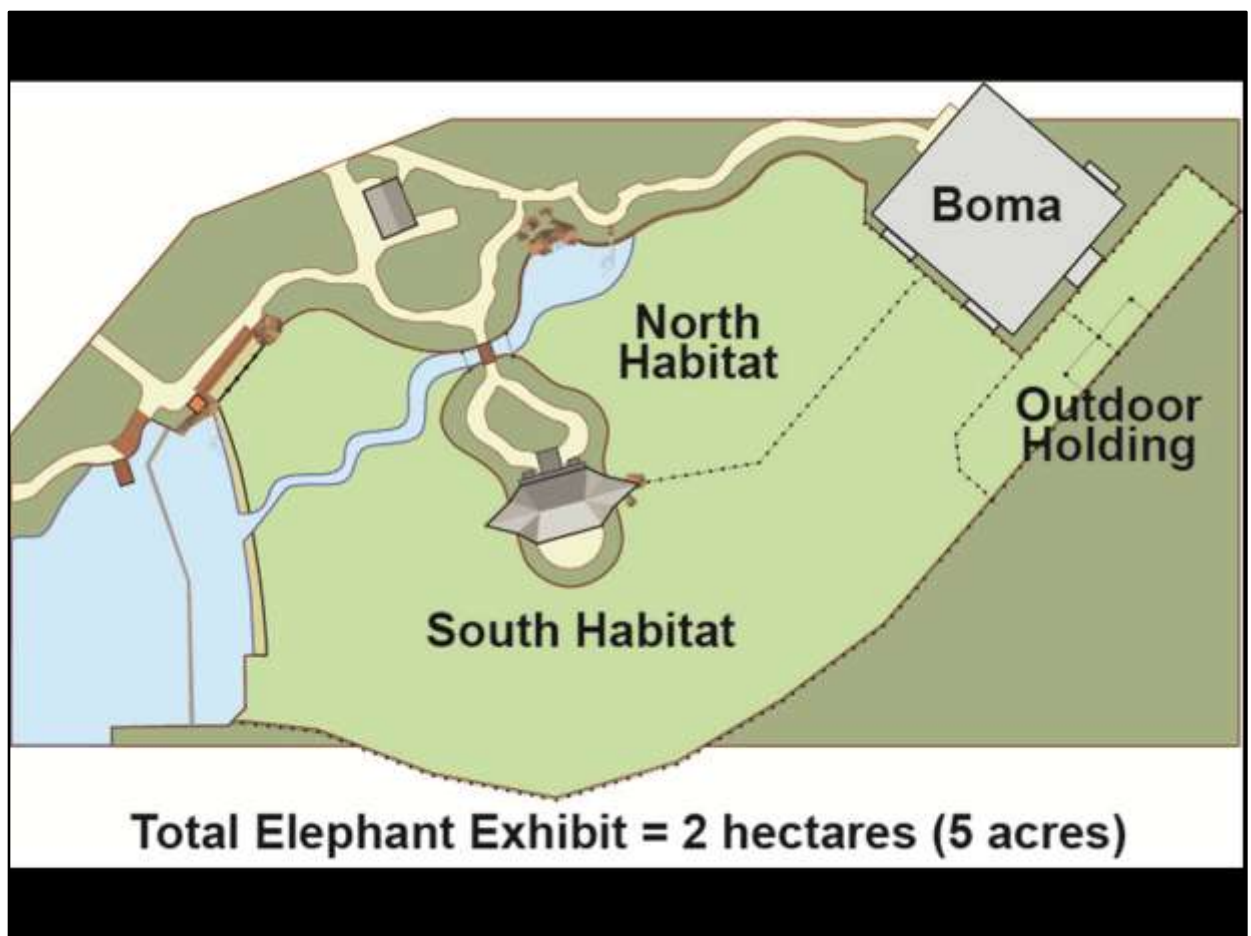


At the time of this presentation, our new African elephant exhibit was less than one year old. It cost \$11 million.

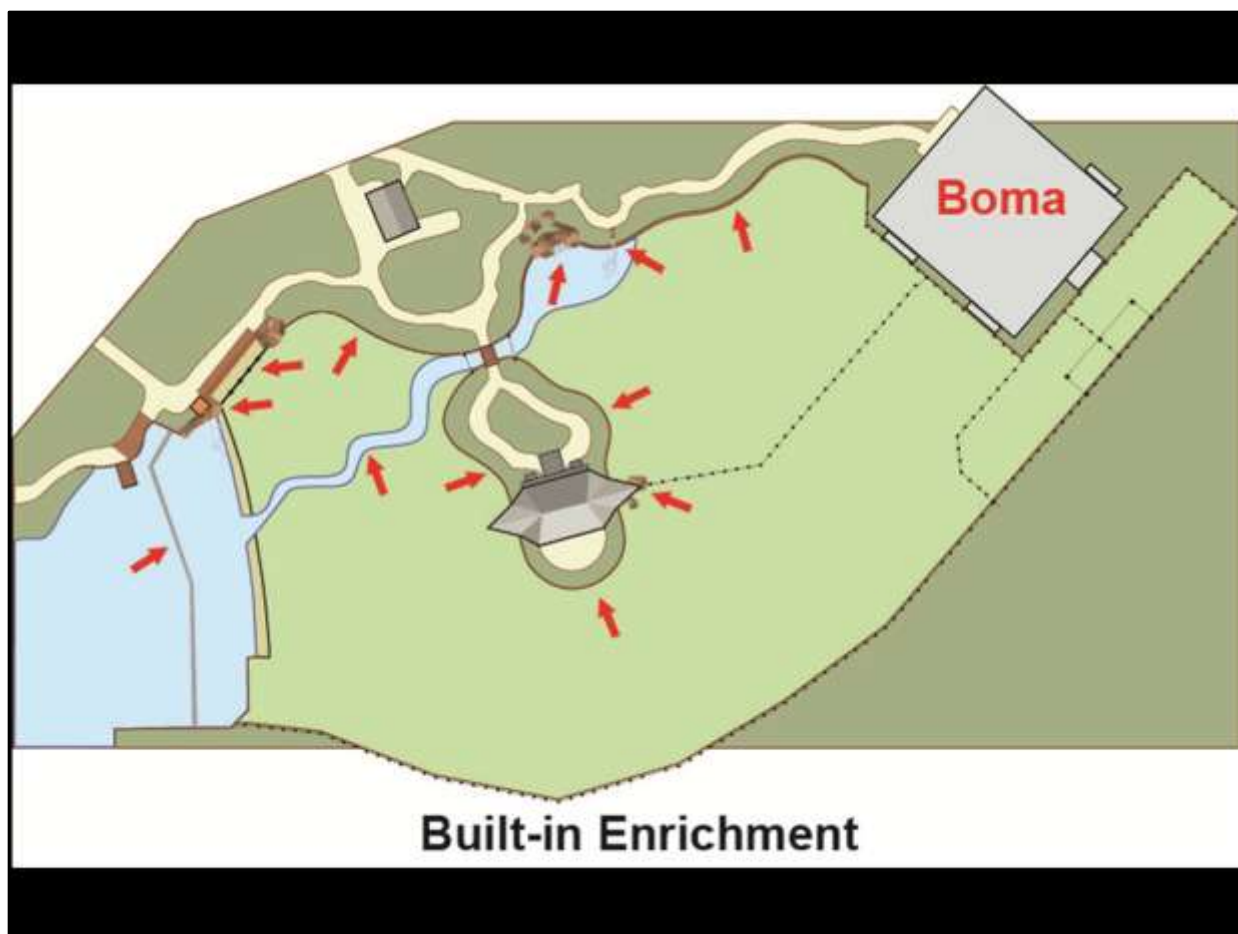
It is a single species exhibit for a herd of 7 elephants. We had one female, approximately 45 years old, and acquired 6 animals from a reserve in Swaziland. All but one are young. There is one young bull.

We had a concern about introducing all of them together, especially our old female.

After a brief few months, the entire herd was one, with the old female as the matriarch. The success is credited to the design of the entire exhibit, especially its size, and the thoughtful care of the staff.

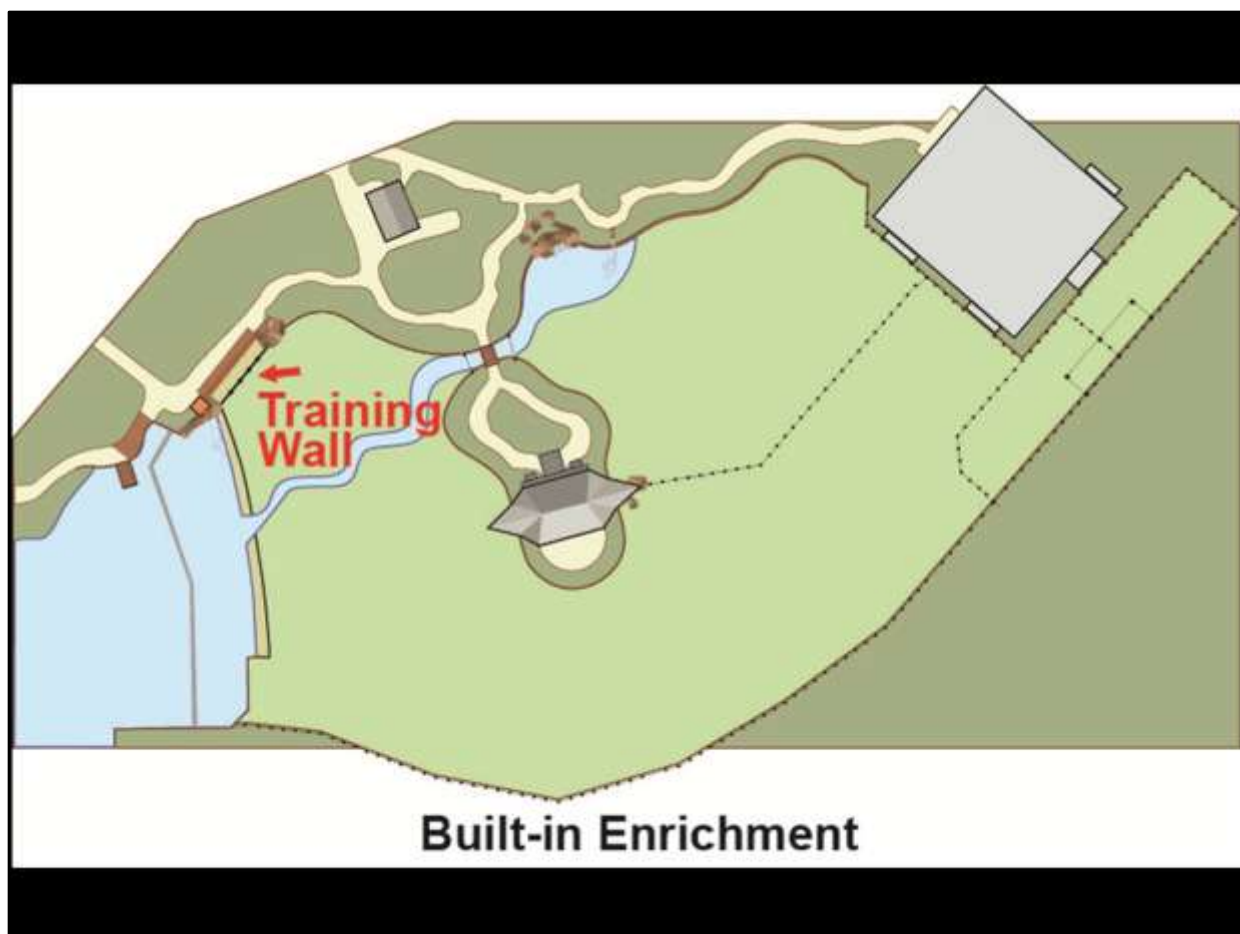


The exhibit was designed with a building for in-door holding, named “Boma.” it is 18,000 sq ft (1,672 sq meters.) The North yard is .5 hectares. The South yard is 1.5 hectares. They can be used as one open yard, or two separate ones. The Outdoor Holding yards equal 780 sq meters.



Enrichment is built into some of the hardscape of the outdoor exhibit.

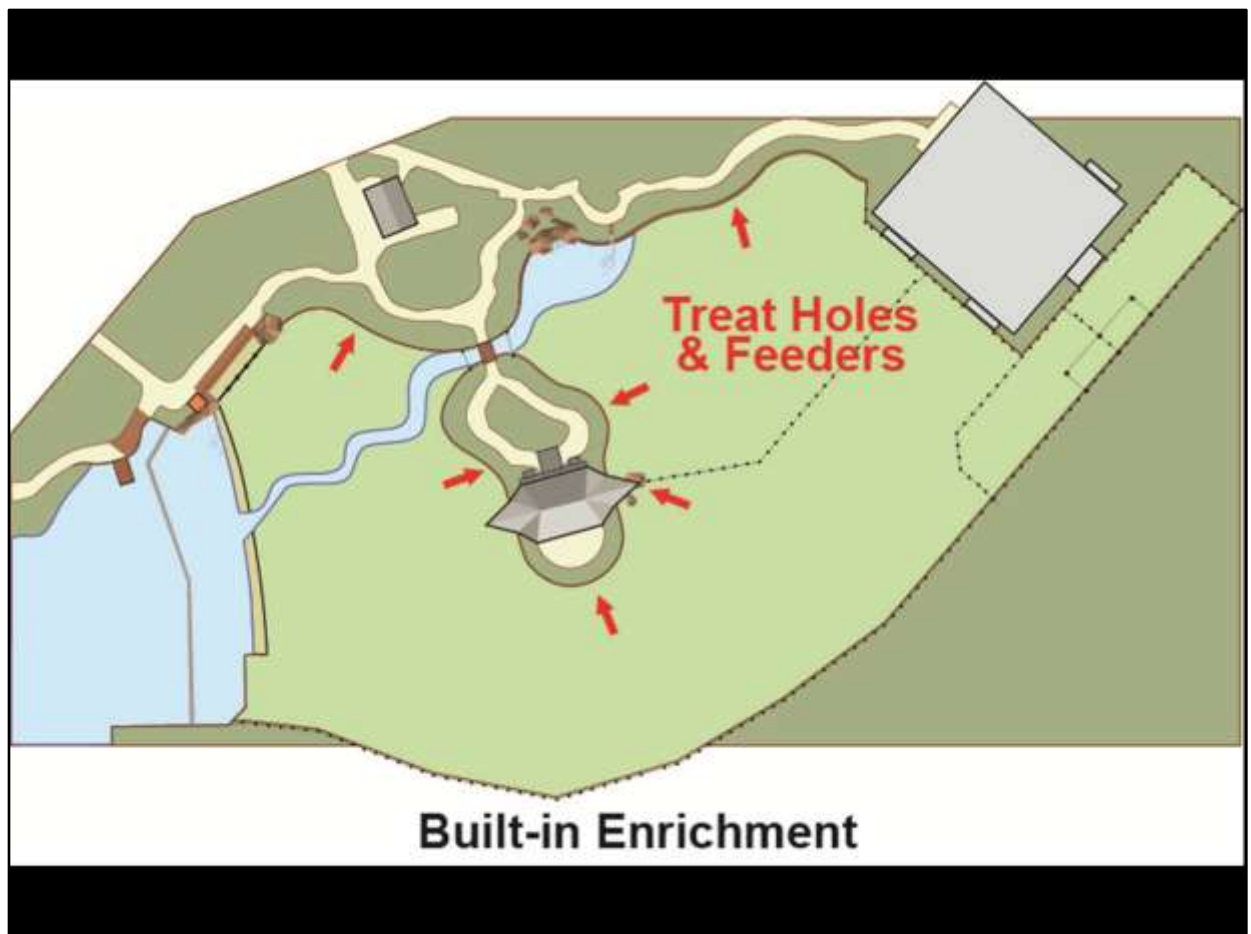
This presentation will explain the enrichment that is presently in use.



The training wall is situated at the opposite end of the exhibit, from the building. Its location encourages the animals to have a rewarding experience, far from their night quarters.



The training wall is close to the public, as well. One keeper works with the animal while another talks to the guests.



The Treat Holes are PVC pipe, built into the concrete walls, or crevices in the themed termite mound.





The keepers are inconsistent with where they put the treats, making every day different.

A future modification to the holes in the walls, is to connect the pipe from above, on the other side of the wall, to the ground level. It would allow the keepers to drop food into the pipe from above, randomly, throughout the day.



The treat holes encourage the elephant to the walls, close to the public.

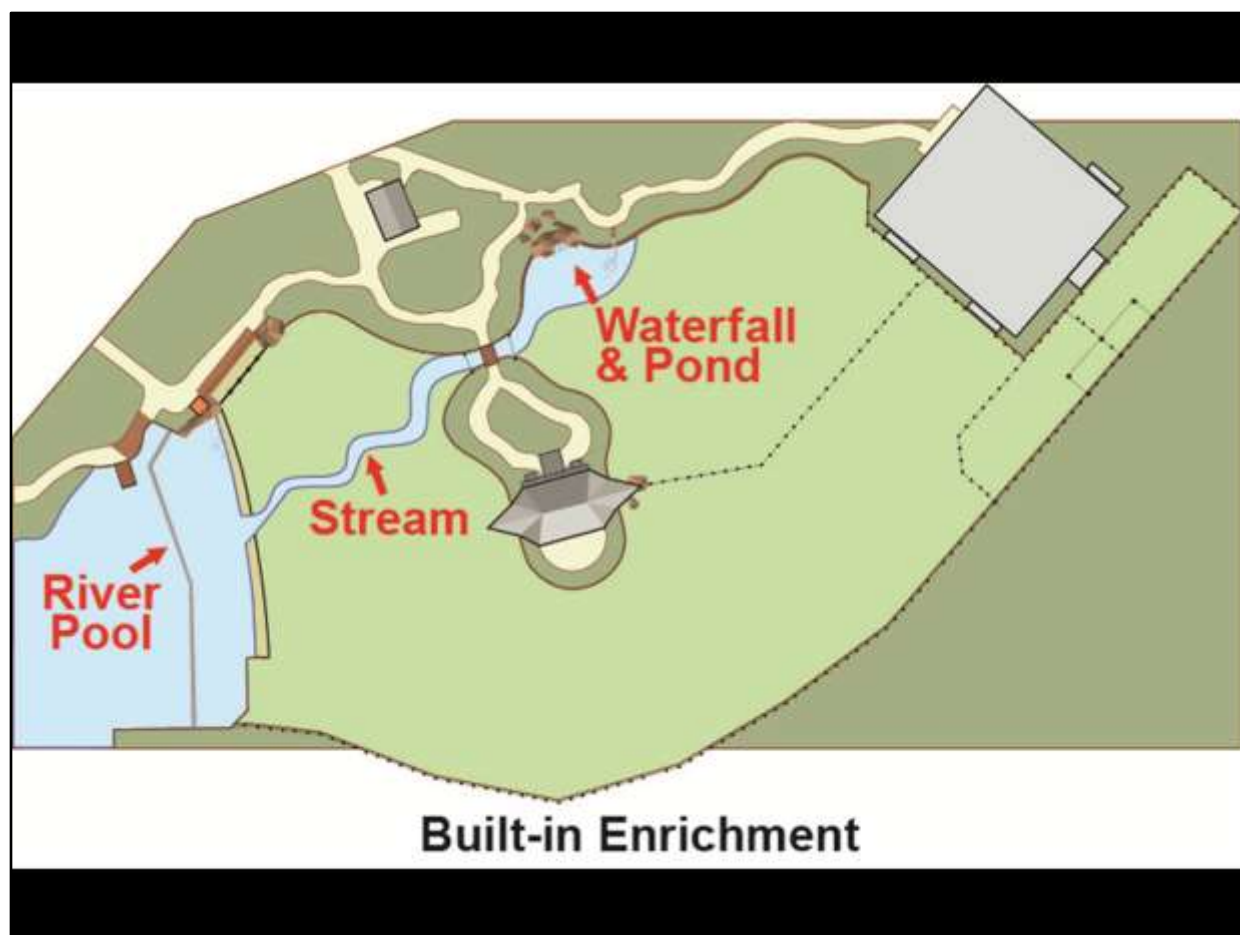




Hay feeders are mounted to the walls. They require the elephants to eat at the walls, near the public. They are also easily accessible to the keepers.

From the visitor's perspective, the feeder at the top of the wall, in the foreground, is barely noticeable.

Hot wire prevents trunks from stripping the landscaping.



The River Pool was converted from an already existent body of water. This was, and still is, a boat canal used for narrated guest rides, in pontoon boats. Elephants can access 2 million liters/1,200 sq meters. It ramps down to 4 meters deep.

The Stream is 166 meters long and about 1 meter wide. The Waterfall pond is up to 1 meter deep.



Top: During the summer, the elephants swim in the River pool almost daily. There is a barrier, made of steel bars, that prevents them from going beyond their “pool.” Its top is just under the surface and barely visible in the bottom right of the photo.

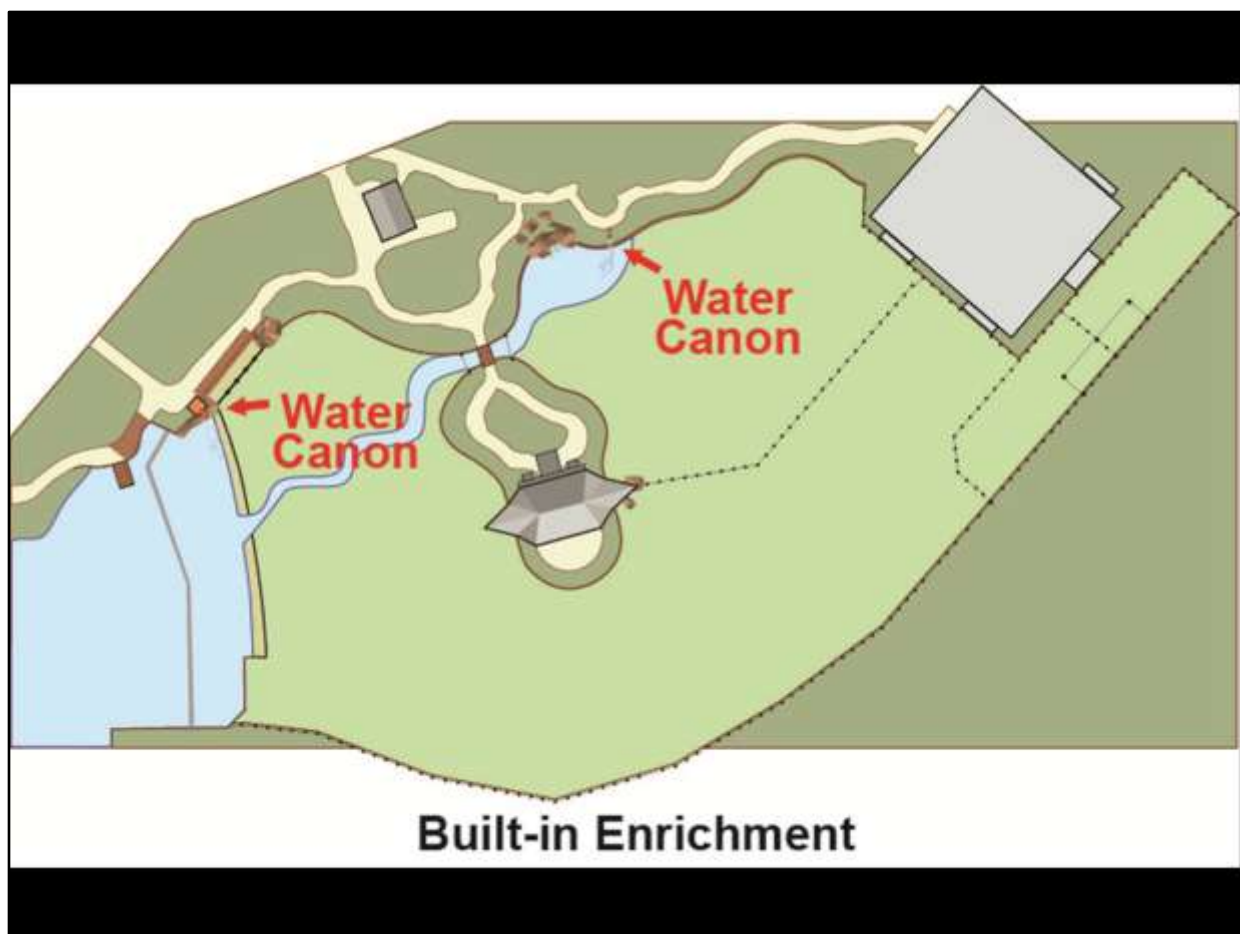
Left: The Stream offers a slight obstacle to the yard for interest.

Right: The Waterfall pool is wide and shallow, allowing for several elephants to access, without any one getting cornered.





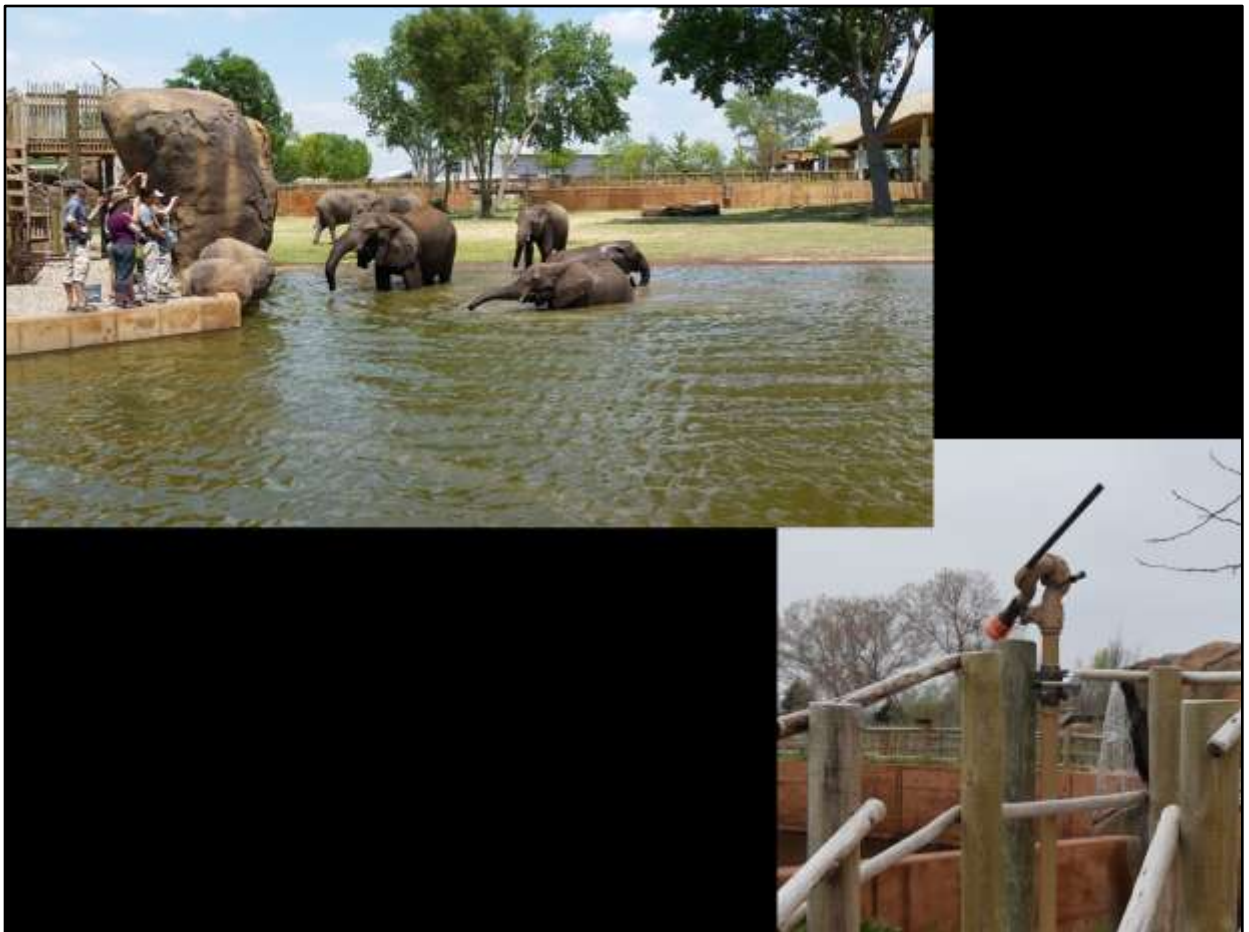
The elephants also drink from the outdoor water features.



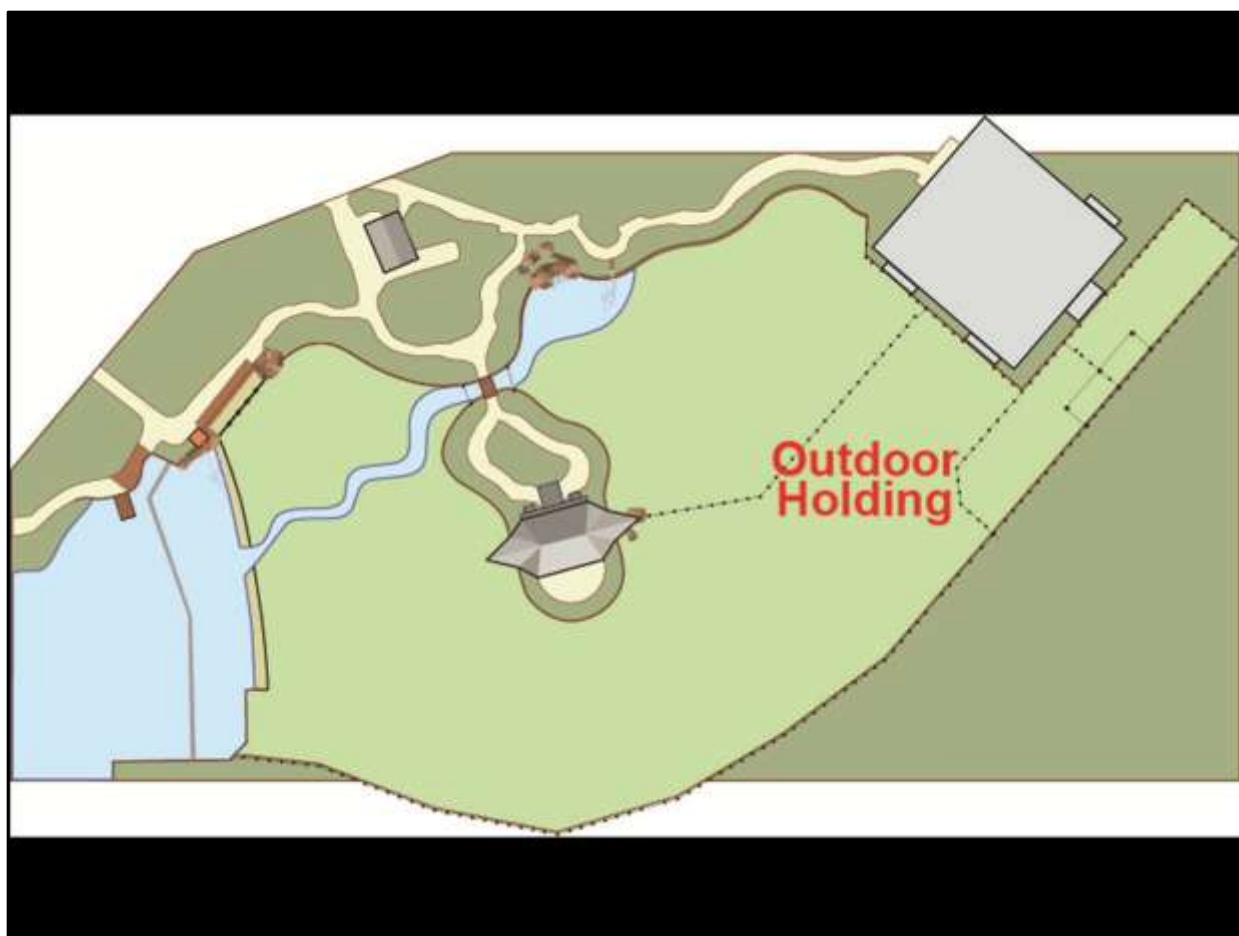
A water canon is built in at each pool. They attract the elephants to the pools, and delight the visitors.

They offer opportunities for Keeper Chats.





The water canons attract the elephants into the water.



The Outdoor Holding yards, combined, equal 780 sq meters.  
They can be used as one or two pens.

This area is accessible to large equipment for hauling into and out of. Equipment then have access into the yards.



The Outdoor holding area is handy for shifting or separating animals. Animals can shift into the large outdoor yards from here or the building.

It is on the south side of the building and offers nice outdoor access on colder winter days. Our prevailing southern wind is somewhat blocked by the tall near-solid wooden fence.

## Other Nifty ENRICHMENT *outdoors*



The keepers auger into the ground and set dead trees and large limbs into the holes. Scents and foods can be smeared onto them. The elephant strip them and tear them apart.





Our local electric utility company and vetted tree trimmer contractors bring us downed trees and limbs for browse and general enrichment.

It saves them the cost of landfill dumping and a free source for us.





Battery powered deer feeders, hung from tall trees, distribute food pellets. They are activated by timers, set to random times throughout the day.

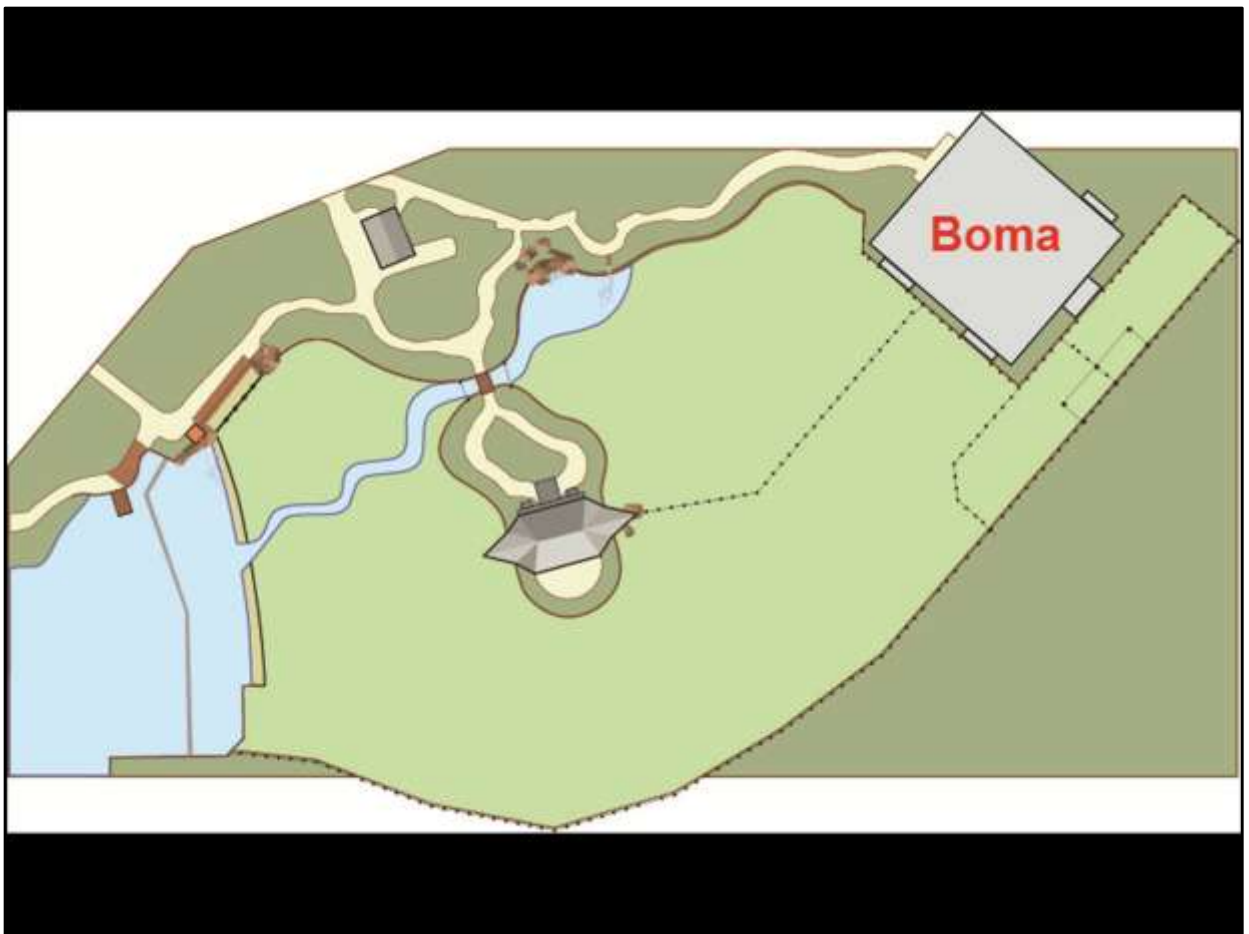
The elephants quickly learned to respond to the sound of their activation, not audible to the visitors.



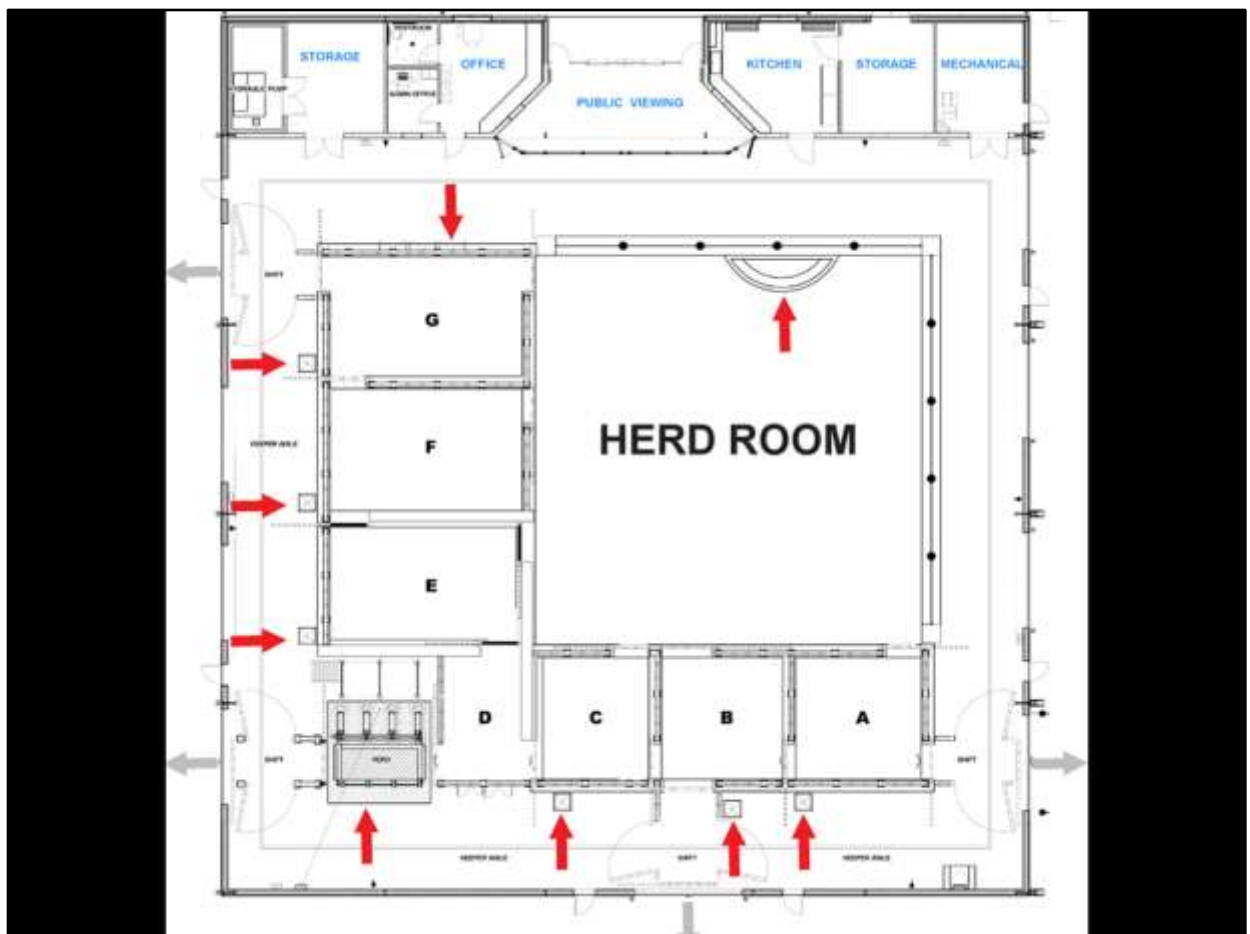
Food is buried under piles of sand, thrown into piles of sticks and browse, and tucked into or under logs.

Not visible, are rocks for rolling and large piles of dirt for laying on.

Plans include terraced areas for climbing and a multi-use, fabricated “tree trunk” for hidden and hanging treats and toys.



Portions of the “Boma” building are accessible to the elephants, the guests, and to large equipment.



Clockwise from top left: training wall, pool, hay feeders, rotating ERD (elephant restraining device,) and more hay feeders.

Although the feeders are necessary, they are built in complex designs to make their access enriching to the animals.





This is the view from the public viewing area. The yellow stripe on the floor is a helpful reminder of the safe distance form the animals.

The large Herd room has a bottomless sand floor, and multi-purpose devices.

Large overhead doors, on opposite sides of the building, create a cross breeze. On the ceiling are giant fans, heaters, deer feeders, hay nets, various grappling hooks, and lighting.





The hay nets are suspended from retractable winches, that are lowered, by timers or manually. They create movement among the animals throughout the day.

Hanging from the ceiling and columns are PVC pipe puzzle devices and browse.



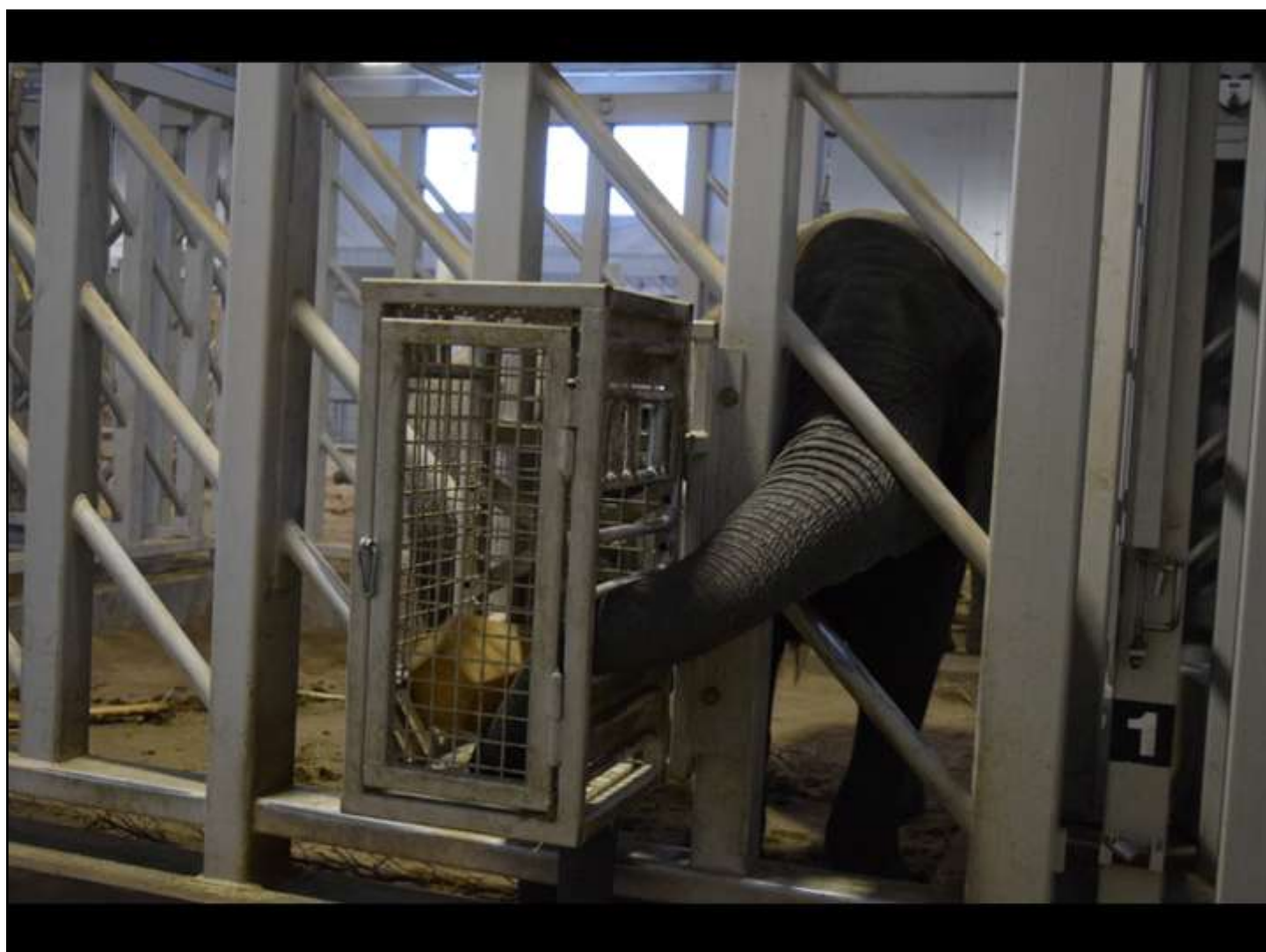
Hay nets, browse, and treat hangers are hooked to columns and from ceiling.  
When the twigs in the PVC pipe are removed, food falls out.



The pool was deemed too deep, at 1/2 meter, so was made shallower. The keepers wish it was larger and not surrounded by sand, as it clogs the drain.



The hay net winches are controlled from various locations.



These stationary hay feeders were custom built by Zoo staff.





This is another custom hay feeder. These rotate.



These custom built feeders are stationary.



These waterers were custom built in-house also. They come apart for cleaning. Since they are indoors, they do not need heaters.



The indoor training wall. It includes D-rings for chains and multi-changeable bars, since one size does not fit all.





The keepers cannot have enough D-rings, with which to hang enrichment devices. This one shown can be arranged in various poses to prevent boredom.



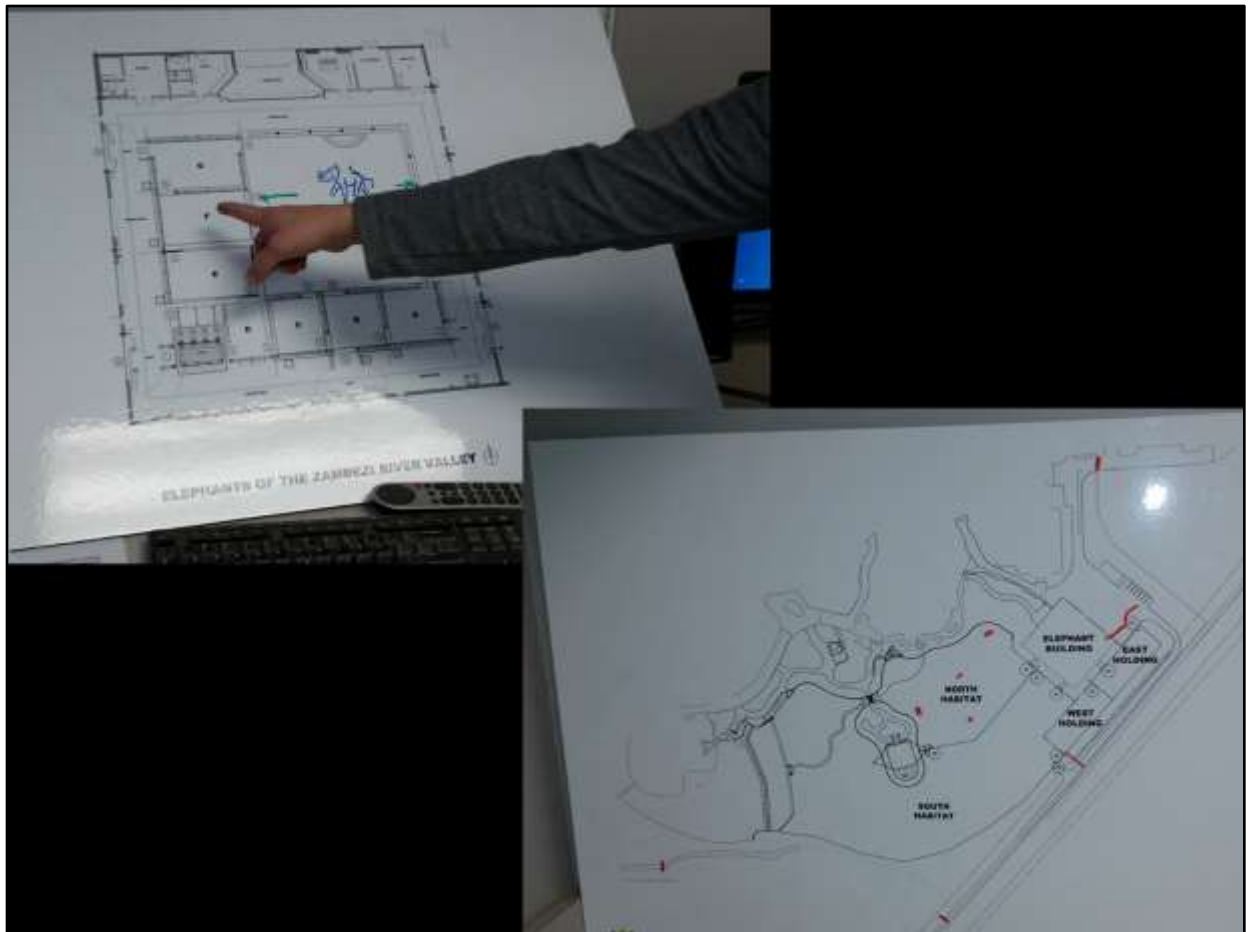
The elephants get credit for this enrichment device. When the keepers noticed them inspecting the holes, treats were added. Round poles, rather than square, are recommended.

# Other Nifty Stuff



The live video is essential for observation and management. It is accessible to keepers by web, and therefore mobile devices, for after-hours.

The solid concrete walls, in the back of the building, are disliked by the keepers. They create blind spots for both keepers and animals, with sometimes startling results.



The building and exhibit diagrams are highly useful for meetings and daily strategy. They are portable, dry erase boards.





Here are two useful items, that the keepers want to share.

This wheelbarrow is easier to handle than the traditional one and will not tip over. It is well balanced and heavy-duty.

On the right, the keepers are proud of their invention, the treat carrier. This cleanable container, allows them to carry a sizeable portion, while working. Treats can be tossed, randomly, throughout the day.