



Report on HippoTile Trial Site in the South American Tapir House at Chester Zoo

First written in June 2014 and updated in June 2015

BACKGROUND

On 6 March 2014, a HippoTile floor was installed in the Tapir House at Chester Zoo. The Zoo was not charged for the materials or the labour involved in the installation. The new floor was covered with hardwood woodchip, sourced by the Zoo, and the tapirs, Jennifer and Cuzco, were returned to their home.

Prior to the installation, the Rhino Team Manager, completed an extensive questionnaire about the current stable management practices in the Tapir House.

On 3rd June 2014, three months later, we revisited this questionnaire in the Tapir House, enabling us to compile an interim report.

It was noted at the time of the interim report that, to be sure of the results, the trial needed to be continued over the winter period, when the tapirs spend more time indoors. This would also provide a longer period of assessment.

For this reason, on 4 June 2015, Janet Warner met with Helen Massey, currently in charge of the Tapir House, to reassess the performance of the HippoTile System.

TIMINGS

The trial started in March 2014. The interim report was written after three months use. At the time this report was written the HippoTile System had been in use for 15 months.

In the interim period Jennifer and Cuzco had welcomed the arrival of their son, Zathras, born August 2014.

BEDDING

In the original set up which had a concrete floor and a straw bed in the back quarter of the house, 2 to 3 bales of straw were removed and replaced each week. As the tapirs most obligingly defecate into a large low sided bucket issues with droppings are not addressed by this trial. In the original set up, they were urinating both in the straw bed and in the concrete area.

In the HippoTile set up, hardwood wood chip has been used since the beginning of the trial. This has been extremely successful with no bedding at all needing to be changed or removed on a day to day basis. In the 15 month period of use, the total bedding has been removed and replaced only once as it had become broken down and dusty. (It had not become soiled or smelly.)

Compared to disposing of two to three bales of straw per week, this is a considerable saving.

TIME AND ENERGY

In the original set up, an hour per day was spent on the cleaning and management of this Tapir House. Removing wet bedding and hosing down the concrete took the majority of this time.

The only care the stable requires in the HippoTile set up, is a brief hose to ensure the correct humidity. The total time taken per day is now in the region of 20 minutes or less. Time tending the actual bed is 'miniscule'.

Another considerable saving both in time and water.

AIR QUALITY

In the original set up, despite copious hosing, there was a definite smell of ammonia/animal urine in and around the Tapir House.

In the HippoTile environment, the air is odour free, without a trace of ammonia or urine. When we visited on 4 June 2015, the heating in the Tapir House was on quite high as a sick capybara was in the house, and the routine hosing of the bedding had not yet been carried out. Despite this, and it being a lovely warm, sunny day, the air quality was excellent.

Given the expansive urinating habits of the male tapirs, this is a considerable achievement and improvement.

(Because the HippoTile system allows urine to drain away immediately where it occurs and prevents it mixing with air, ammonia is not formed. Once ammonia has contaminated the air in an animal house, hosing can do very little to clear it.)

FOOT HEALTH

At the start of the trial, the tapirs visibly disliked walking and standing on concrete. One tapir had a cracked hoof.

In the HippoTile set up, the tapirs are very happy to walk and stand on the woodchip and the HippoTiles. Because far less hosing is required, the woodchip has been able to be extended to cover the outside concrete too. This has also helped to make the tapirs more comfortable. Since the HippoTile set up has been introduced, there have been no further foot problems in the Tapir House.

WARMTH

The Tapir House is heated to a specific temperature. As the new flooring naturally feels much warmer and does not have the cold striking feel of concrete, it is presumed that the cost of heating the house will have gone down. A review of the electricity supply should be able to confirm this. We are hoping to acquire this information soon. (Christopher Williams, who is responsible for heating and electricity costs at the Zoo, has been contacted.)

LYING DOWN

When they were living on straw and concrete, the tapirs only lay down in the back quarter of the house.

In the HippoTile set up, the flooring now has bedding throughout, so the tapirs can choose to lie in various places around the house. As they are ageing and lying down for considerable periods, this seems to be much appreciated. The sunny spot in front of the window is now a possible option which is frequently selected, providing a much better viewing opportunity for the zoo's visitors.

WASTE DISPOSAL

In the HippoTile set up, other than droppings, the only waste to dispose of has been one load of clean but crushed hardwood woodchip. This may be recycled or discarded depending on botanical needs and biosecurity measures at the time.

WEAR AND TEAR

After 15 months of use, by a tapir family of three and various capybaras, there are no visible signs of wear and tear, and the system is continuing to function at the same level of efficiency.

ENRICHMENT

The animals' living conditions have been enriched in that they are much more comfortable under foot, in their breathing and in their opportunities to rest. Their habitat is subject to far less disturbance on a daily basis. Their conditions are much closer to the conditions they would select in the wild. More natural behaviours are accommodated. Rooting around for food can be encouraged in this environment.

The visitor experience has been enriched in that better viewing of the animals is possible and the whole area smells much better.

SAVINGS






The Zoo is making considerable savings in the amount of bedding that needs to be supplied and discarded. The keepers' and administrators' time associated with this is another saving.

There are savings on heating bills still to be calculated. The cost of drugs and care for foot and health disorders is also a saving still to be quantified.

Without the daily extensive hosing, several gallons of water are not wasted every day.

CONCLUSION

The HippoTile System is fulfilling expectations in all respects:

-  It has reduced the costs of running the Tapir House.
-  It has improved the living conditions of the tapirs.
-  It has improved the visitor experience of the exhibit.
-  No problems or disadvantages have been identified.
-  At a time when use of energy and sustainability are becoming ever more relevant, this use of recycled plastic is particularly recommended.

Report compiled by Janet Warner (HippoTile Systems. Founder) 29.06.15

Agreed by Tim Rowlands/Nick Davis (Chester Zoo. Curator/Assistant Curator of Mammals) 02.07.15

Agreed by Helen Massey (Chester Zoo. Assistant Team Manager) 02.07.15

