The Digging Deep Tour 2013

Hosted by

YOMA CHERRY LODGE

Background

In November 2012 Geoff Mead returned from a trip to Myanmar inspired by expatriate British lady, known affectionately by the locals of Lintha Village as Mamma Sue. Lintha is a small fishing village of approximately 5000 people near Ngapali Beach on the west coast of Myanmar. In the twelve years since she fell in love with the place, this modest lady with her husband Sahin has established an English language school for 250 students, a play group for pre-schoolers, a computer school, library and a small orphanage. They also provide health care to the people of the village and surrounding areas. These activities are supported by the UK registered Andrew Clarke Trust. Sue identified the four key areas of greatest need for the local community as – potable drinking water supply, sanitation, waste management and emergency housing.

Lintha is an extremely poor area. Housing is small, overcrowded, very basic thatched huts. Typically a family of 4 – 6 people will occupy one room about 4m x 4m. Often cooking is done outside. Most residents struggle to put food in their mouths and during the monsoon season when the fishing boats can't put to sea, there is not enough food to go around. Many children are malnourished and illness is common.

Only about 30% of the population have access to a toilet which brings with it the obvious human dignity, health and environmental problems. There is no safe drinking water supply and no garbage collection or management systems. All these things contribute to an unhealthy environment.

With a group of likeminded friends and work colleagues, with expertise in each of these technical areas, we returned in July 2013. Our quest was to leave a tangible outcome to improve the health and wellbeing of a few families in a Myanmar village.

The team (L to R) Terrry Wilson, Anne Prince, Rowena Carter, Peter Evans and Geoff Mead.

The following is a brief account of our adventure.

This is the story of a weeklong project to build a prototype septic tank, disposal system and toilet suitable for use by a small group of families. The ultimate goal was to develop a system that could be introduced across similar communities on a broader scale.

Where toilets presently exist, they discharge directly to an earthen pit (pictured right).In our opinion it is most likely that this practise is contributing to ground water contamination and some of the local health problems as the ground water is drawn from nearby wells for washing and drinking.

This is the beginning of a project which is as yet undefined. We have learnt a lot from this exercise and we have so much more to learn. The best and only way to learn is in our opinion to listen, look and do. We hope this pictorial account of our trip goes some way in providing you with an insight into what we achieved.

Hopefully we have left a legacy in one of the poorest countries on earth and in one of the most underprivileged communities in Myanmar. Our role was to design, supervise and assist so the workers not only learnt contemporary techniques but also gained short term employment, much needed in the wet season when the fishing village can't fish. Our team of workers were some of the most hardworking people we could have hoped for, with minimal tools but a sense of humour and great skills, pride in their craftsmanship and willingness to work in all weather conditions we achieved more than we thought might be possible in the short time we had

This project would not have been possible without the generous time, support and assistance of Yoma Cherry Lodge staff, its managers Mamma Sue and husband Sahin.(right) The construction was funded through generous donations from the following supporters here in Australia. – Ben Ackland, Ruth & Greg Allen, Josh Allen, Glen Barnes, Mary Davison, Chris Gill, Liz & Ken Grainger, Wendy Hardes, Dianne & Dennis Houghton, Bronny King, Zarndra Piper, Jenny & Mike Rowland, Linda & Tony Seymour, Marion & Craig Sonter, Cherie Soto, Merran & Glenn Storrie, Sinia & Wayne Townsend, Jess Tye, Alison Ward and Kerry & Terry Ward.

Thank you all for your support.

Thanks also to the technical support provided by Tony Davies who was due to join us on the trip but had to pull out for personal reasons and Paul Pholeros of Health Habitat. Your advice was invaluable.

Day 1 - Visit to village, site meeting with land owner to gain final approval to construct toilet and septic tank to service a number of families.

Walking to proposed site. It's the wet season which brings some major challenges.

Sahin gaining final project approval from landowner and his mother.

The site underwater and with sandbags to stop us getting bogged in the mud with our thongs.

Typical water well used in village for bathing and washing.

Site consultations in the rain!!!

Further planning and design briefing.

Day 2 – Measuring and set out of site for septic tank and toilet taking into account site layout, space constraints and building configuration, visit to local township 6kms away to purchase additional hardware materials.

Measuring and setting out the site.

Pegging and measuring the site.

The locals pre dug a hole to our size specifications but not in a suitable place.

Local hardware store.

Super dodge loaded with supplies.

Day 3 - Septic tank hole excavated in trying conditions due to high ground water table just 750mm below surface level. Ground water constantly re-enters the excavation which was dug using a pick, shovel, hands and "wok". A portable petrol pump was secured to drain the hole and keep the excavation "dry". It ran continuously to enable the base slab to be poured and walls built.

3 staff start digging with hoe and shovel.

Water constantly enters the hole, emptying soil "a wok at a time". Measuring overall depth.

Site covered with trap to keep out rain.

Putting in timber formwork for base slab.

Concrete mixed for base slab.

Day 4 – Masonry – as bricks were carried to site, septic tank walls were built in a day and footings poured for toilet. Due to the high groundwater level, the tank could not be effectively sealed as the mortar in the bottom course of bricks constantly washed out. Relining the base to seal the tanks will be done during the dry season when the water table is lower. Consequently, the toilet will not be commissioned till then.

Bricks conveyed to site – owner helping.

1st course of wall bricks.

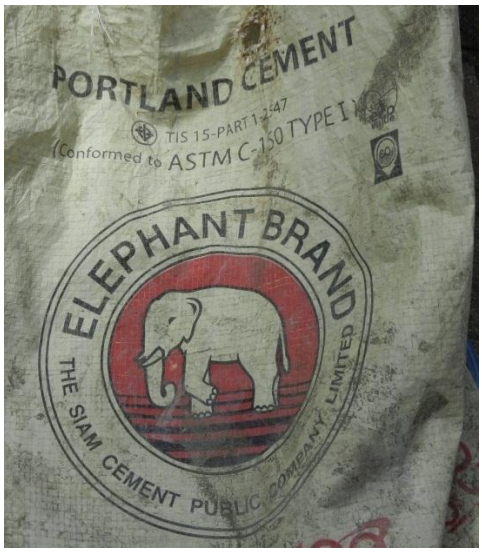
Final design consultation with Geoff.

Tank taking shape.

Geoff checking final height of walls.

Work on dividing wall commences.

Rendering the inside of the septic tank for water proofing.



We don't see this brand in Australia.

Miscommunication resulted in toilet foundations being over excavated.

Geoff measures the footings. Note the Myanmar safety boots!!!

Footings boxed up and poured.

Footing poured and checked.

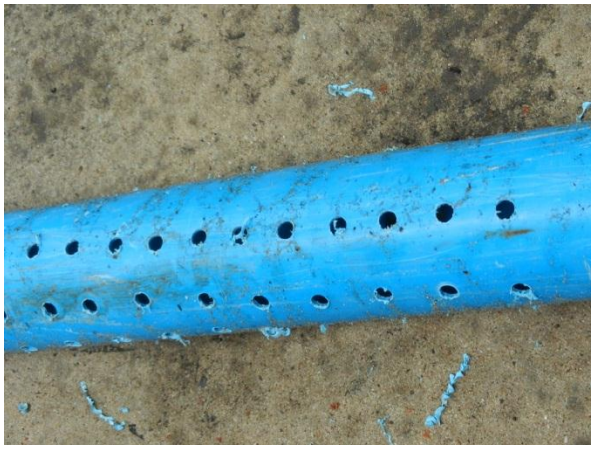
Day 4 continued – Carpentry - Peter spent the day assisting the carpenters joining timber for the main posts. Timber was not available in the required length and had to be joined. Very labour intensive and slow. The guys eventually found a power saw which on closer inspection found to be useless as the blade that was too big, there was no safety guard and no handle to hold onto. After trying to resolve some of these issues Peter found it was also missing a power plug!

Local carpenter - no power tools.

Peter sawing timber.

Geoff helping chiselling out the timber to house the bearers.

Using the only power drill at a nearby home with locals watching.



Power drill was used to put seepage holes in the disposal pipe.

Anne and Terry backfilling the old hole.

Day 5 – Rendering inside the septic tank for water tightness.

Rendering the septic tanks for water sealing with aid of the multi – purpose wok. It will probably cook tonight's dinner too.

Fully rendered septic tank.

Fixing reo for the concrete lid.

Lid poured.

Septic tank hatch cover poured and ready.

Day 6 - Started the erection of the toilet structure.

Corner posts for the toilet in position.
The sun is out – but not for long!!

Fixing the timber posts to steel stirrups.

Ensuring the posts were plumb.

Posts bolted into position.

Both floor bearers in position.

Geoff checking the levels.

Day 7 – Disposal trench excavated and installed, framework and flooring of toilet completed.

Local villager crushing stone with a hammer to make blue metal for outlet pipe bedding.

Bagging the gravel to carry to site.

Disposal trench. It's been raining again!!!

Hole in side of septic for slotted overflow pipe.

Woven fabric to stop the pipe silting up, slotted pipe bedded in gravel and wrapped in fabric

Trench backfilled .

Gluing plumbing pipes for installation.

Posts in position and joined and roof affixed.

Putting in the bearers and joists.

Compressed flooring in position.

Finishing the timber work.

Measuring for the pan installation.

Pan cut out.

Woven walls ready for framing.

First side wall installed.

One wall up.

The door.

Beneficiaries watching progress.

The team with a grateful beneficiary.

The new toilet with iron roof, bamboo walls and squat pan and septic tank.

Pan installed – ready for action.

Some of the families who will benefit from our endeavours .

Challenges

- Building during the wet season.
- Access to electricity – not many homes have power
- Access to good quality tools, particularly power tools.
- Easy access to building materials. Many materials need to come from Yangon and that takes at least 3-4 days.
- High ground water during the wet season in particular.
- Language barrier – you need an interpreter.
- Good quality timber difficult to get and expensive.
- Ongoing maintenance to desludge septic tank once every 5 - 10 years is needed and presently there is no service available.

Lessons learnt

- Construction should commence at the end of the dry season (May) when the water table is at its lowest.
- A lightweight generator for power supply is essential.
- A kit of basic power tools is required.
- We need to reduce dependence on timber which is extremely expensive by Myanmar standards and assess other construction materials such as brick.
- Need to set up a process for the septic tank desludging to occur.
- Toilet building height could be reduced.
- Local tradespeople are hardworking and their skills in carpentry and masonary etc are of a high standard.
- Although it is desirable to engage the beneficiaries in the construction process, there are also benefits in hiring local tradespeople as it provides income for local families.
- Don't take anything for granted.

Project cost

The total cost of installation of the toilet and septic system suitable for use by 30 people was $900 US, or approx. $30 per person. The project team funded their own travel costs and expenses .

Next steps

We are presently evaluating other more cost effective construction methods. It is expected that costs can be reduced significantly. A number of sites of high need have been identified and plans are underway to return next year to install at least two more septic tanks and toilets. Images over the page show one of the identified sites.

Next site has been identified in this location where the need is very high

The washing well isn’t even lined

Water sampling

There is a proven correlation between drinking water quality and health. We sought to determine for the first time what the water quality of both washing and drinking wells are in the village of Lintha where we visited to construct a prototype septic tank and toilet for a grouping of villagers. Human waste being directly discharged to the ground as exists in all the toilets currently used in villages can have a negative impact on ground water quality which is used for drinking and washing.

There are 2 water drinking water wells located on outskirts of village where the average walk would be up to 2kms each way

Water rises with tide as fresh water lens on top of saline water

Extracting washing water by bucket

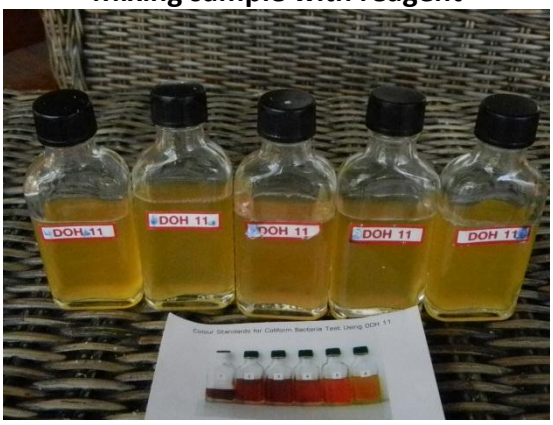
Anne and Terry heading off to take water samples from drinking and washing wells

Taking sample with sterilised whiskey bottle at drinking water well 1

Sample at unlined earthen wall washing well

Mixing sample with reagent

Water samples reacting with reagent

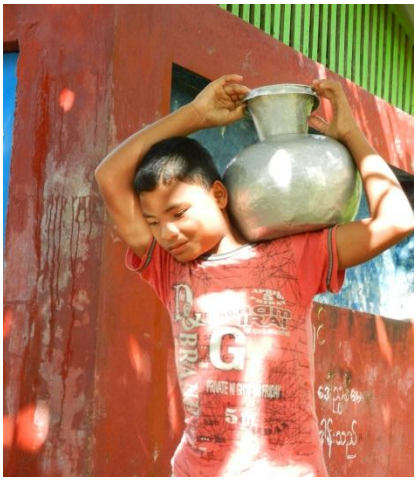


After prescribed period samples "unfit for human consumption" as colour guide

Some wells are not lined and just earthen walls

New water tank under construction

Neighbouring village with water supply tank donated by German foundation



Taking drinking water home
Typically up to 2km walk each way

Typcial washing well in village

Waste Issues

In the immediate area of Ngapali Beach are currently 17 resorts which cater for international tourist over the dry season of approximately 7 months. Based on an 80% occupancy ratio we estimate that there are approx. 125,000 bed nights based on the number of rooms currently available. There are many more large scale and up market resorts under construction to cater for the increasing number of tourist seeking to experience this unique area. At odds with this development is the total lack of any formal waste management system for collection or disposal. There are no litter or rubbish bins in the public areas, no collection program and no landfill were any waste can be deposited. These photos seek to show the issue as it was presented to us by a number of resort owners who are seeking assistance and guidance on options to improve the current situation. They understand the current situation is unacceptable but lack the technical knowledge and expertise on what alternatives could and would be appropriate.

Efforts by Chefs Without Borders to build concrete bunkers for waste and recycling but no method or system to empty the bunkers

Looking at an area where some rubbish dumping was alleged to occur in the previous season but has since grown over

Some dumping beside a road

Rubbish dumping under and around housing


Rubbish from the resorts is dumped in and around villages housing – full of plastic and some food offcuts

More rubbsih dumping beside new roadway

Rubbish being used to fill swampland


Rubbish near huts being used for land reclamation

A large amount of vegetation is interspersed with waste

Shampoo and washing sachets left beside well in village as no waste bins are available

Local store with the beginnig of packaging waste wihcih will contiue to grow

Plastic water bottles and drink cans ready for recycling

Beer bottles stacked for reccycling

Unloading bales of glass and plastics bottles for recycling

English Language School

English lady Sue and her husband Sahin travelled Asia extensively and fell in love with the people of Myanmar. .

Her passion to help the local people was touched *"by the plight of a boy whose mother could not afford to feed him or send him to school, they decided to pay for his education along with two other children"*. That led to the establishment of an English language school based on an international curriculum developed by an Australian teacher.

Currently there are 300 students, eight classes per day, six days per week catering from age 5 to adults with two teachers. Classes are between 7.00 – 9.00am and 4 – 7pm (before or after the government school hours). The school is closed on public holidays and Mondays.

A pre-school is also run five days per week for 4 hours per day between 10 – 2.00pm with a teacher and helper. Twenty children are involved in this program seeking to learn to write, read and speak English and the curriculum for this is set to international standard.

Older students can attend language courses on the weekend, Saturday and Sunday. In addition activity classes are also run on weekends. When I went to the school on a Saturday I witnessed about 70 children in a room playing with so much lego it was mind blowing (all donated) and the their creations matched anything our kids could do.

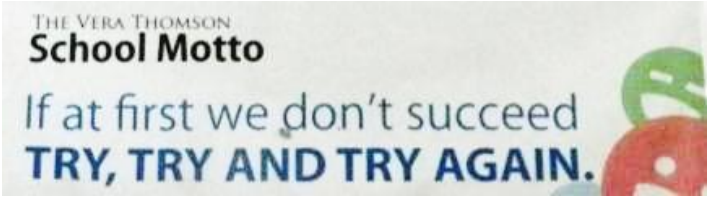
Recently a computer school has been established where computer classes are held twice per day, six days per week for two hours each for basic and intermediate levels with two different teachers focussing on Word, PowerPoint and Photoshop. There are twelve students, limited by the number of computers available all donated. There is no internet connection nor availability.

In addition a small non-government registered orphanage is provided for children in crisis aged between 8 – 15. Currently there are 12 children in care. This home is provided above the English language school building.

All children are sponsored through the Andrew Clarke Trust –http://www.myanmar-aid.org/home.htm. Currently, there is a waiting list of 70 students in Class one and 50 for Class two

Our team delivered 80kgs of books, clothing, soft toys, prescription glasses, posters, pens and pencils for distribution to the school and community.

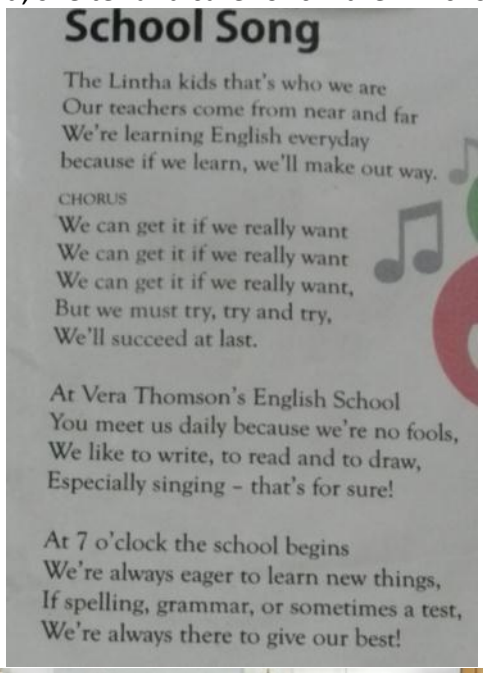
On the following pages are photos of the school, motto, school song and some photos of an activity afternoon which we lead, involving storytelling, drawing and colouring with the "under the sea" theme.



The original school building built by Mamma Sue and the Andrew Clarke Foundation

New school building with computer room addition and living quarters above offering food, shelter and care for children in crisis.

Inside the classroom – doing activitites before class starts



School Song

The Lintha kids that's who we are
Our teachers come from near and far
We're learning English everyday
because if we learn, we'll make out way.

CHORUS
We can get it if we really want
We can get it if we really want
We can get it if we really want,
But we must try, try and try,
We'll succeed at last.

At Vera Thomson's English School
You meet us daily because we're no fools,
We like to write, to read and to draw,
Especially singing – that's for sure!

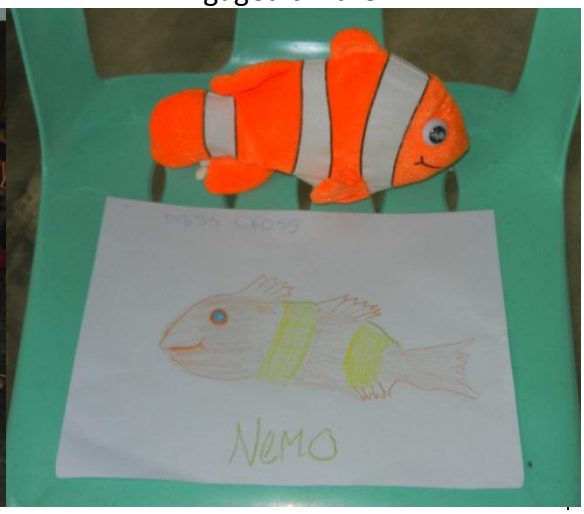
At 7 o'clock the school begins
We're always eager to learn new things,
If spelling, grammar, or sometimes a test,
We're always there to give our best!

Playing with Lego on Saturday in the classroom and creating some great fighter jets

Story telling by Anne and terry

Engaged children

Activity - drawing theme “under the sea”



Nemo soft toy we took with us and Miss cross drawing of Nemo

Posters on the classroom walls from Oz ters from Oz

The Friendship Library for the villagers