

Report on the completion of new toilets, handwashing and waste disposal facilities for Shree Thangpal Dhap Secondary School Sindhupalchok, Nepal October -December 2016



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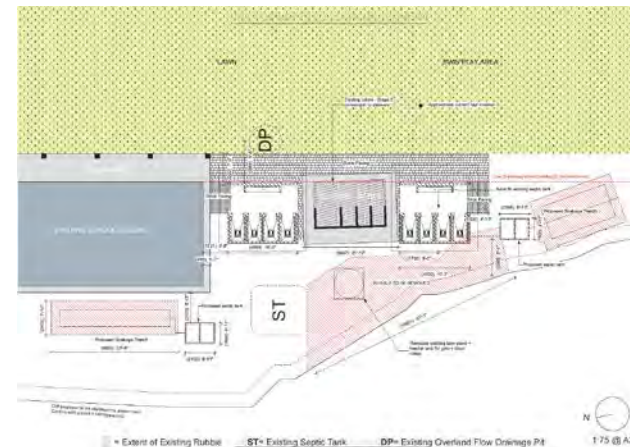


February 2016 Sanitation Design Studio

Project commenced with the February 2016 Sanitation Design Studio – with architectural design students from the University of Newcastle, Australia

Key Design elements for the new toilet / handwashing and waste disposal project:

- Double brick construction
- Hard set render for waterproofing and washing down floors and walls
- Shared hand washing bay of rendered masonry
- Steel framed roof structure with iron sheet roofing
- Insect mesh to openings in roof
- Natural light through translucent/transparent roof sheets
- All materials, skill and labour specified is locally available
- Tap for dip flushing and floor cleaning to each toilet
- Asian pan and outward swinging doors to each toilet
- New stone path area in front of toilet blocks and thresholds for reducing mud being carried in on shoes and into blocks
- Septic tank and soakage trench located away from school play areas and designed with plumber onsite.



Excavation & siteworks – October / November 2016

The local team from Thangpal Dhap village commenced the excavation for the septic tanks and footings in late October - early November 2016 – after the reopening of the access road at the end wet season.



Stone was sourced from the local village, but sand and gravel was transported from Melamchi village, 2hours away



Stone foundation and earthquake band

Stone footing were laid, sourced from stone within the school

A perimeter 'earthquake band' was laid across the top of the footing, and encased in concrete. This banding, taken from the design principles adopted by Healthabitat O/S on the village house reconstruction project comprised of a 10mm deformed bar ladder, encased in 75mm concrete.

PVC pipes were set into the corners and 'T' wall junctions, for vertical 10mm steel rods to be later inserted when the brick walls were constructed. These vertical rods were designed to fit within the doubled brickwork and link the structure together from the foundation to the steel roof truss.



Earthquake band to top of footing - 10mm deformed bar ladder around perimeter



The vertical steel rod is aligned to fit within the mortar joint of the brickwork, and run full height of the wall



Two new septic tanks for the boys and girls toilets

Base slab poured in both septic tanks



Lids formed and poured for the septic tanks



The first bricks are set-out and laid in the girls septic tank by Sam Spong (bricklayer and trainer) and Dawa



The walls of the boys septic tank





The brick walls are built

International bricklayer and trainer Sam Spong trains Dawa and the local village team in setting out and laying the brickwork



The 10mm steel rods are built into the double skin brickwork walls – to strengthen them in the event of another earthquake





International Plumbing team arrive and commence the water supply work

The two international plumbers, Adam Koenigs and Gerard Allen arrive and commence the water supply work.

Work commences with a redesign of the supply route, and training the local team

At the end of day 1 water is connected and flowing on the boys toilet





Plumbing drainage works are completed

Separate drainage systems are built for the boys and girls toilets





Roof work and wall rendering

Steel roof trusses are fabricated and welded on-site by a team from Melamchi

Sections of clear polycarbonate roof sheeting are installed to increase the natural light in the toilets, and make life less appealing for mosquitoes

The rendering of the floor and walls commences



Paving, insect screening and doors

A new 3000lt water storage tank is fitted to the rear of the toilets, to ensure 2 days water supply to the toilets and handwashing areas



Timber framed insect screens are installed between the tops of the walls and the roof trusses, to ensure maximum ventilation and natural light. This will reduce the likelihood of mosquitoes within the toilet cubicles

The final works involve paving around the exterior – to lessen mud and silt build up from finding its way into the septic tank



Official handover of the new toilets, handwashing, and waste disposal system, January 2017



Thanks to the team:

Jeevan Shrestha and the Shree Thangpal Dhap School Development Committee
The school Principal and all staff at Shree Thangpal Dhap Secondary School
Surah Bamjan for looking after the visiting international trade teams during construction
Staff & students from the University of Newcastle, Australia
Jokkhi Waiba, Dawa and the local construction team
The visiting international trades: Samp Spong (Australia), Adam Keonigs (USA) and Gerard Allen (Australia)
IAPMO / IWSH supporting all aspects of the project
Reece Plumbing for their generous donation to the project
Bishnu Shrestha (Healthabitat O/S)
Janak and his brothers with local material supplies and expertise

The new toilets, officially handed over to the school by Sandra Meihubers, on behalf of Paul Pholeros