Plumbing: Vital to Global Health

World Exclusive ‘Community Plumbing Challenge’ launched in Nashik, Nov 2015
Seán Kearney, Manager of International Projects, IAPMO

Community Plumbing Challenge 2015 was hosted at Maha Nagar Palika School No. 125 in the Mukti Dham neighborhood of Nashik, Maharashtra, between 2–5 November, 2015. This was the first ever delivery of the project: in India, and in the world.

The school is home to 400 students. The current washroom facilities were
inadequate for the number of students. As these sanitation issues are common to many Municipal Schools the project was designed with the aim to create practical and educational outcomes that could be used and replicated in many other locations.

Outcomes

Design briefs were issued to all participating Teams. All Briefs, supporting documents and photographs of the existing facilities were made freely available on the IAPMO website: http://iapmo.org/CommunityPlumbing/Pages/Resources.aspx

On 1st November, the Teams visited School 125 to inspect the hand washing facilities. On 2nd November (day one) – they were welcomed back by a 400-strong school assembly. Mr. Shanjay Chawan (Nashik Road Prabhag Sabhapati), Sau Sanjita Gaikwad and Mr. Ramesh Dhongade (local Corporators) were the guests of honour on what was a moving and emotionally-charged welcome for visiting international Teams. Following these proceedings, Teams got straight down to work in presenting their individual, in-depth concepts for upgrading sanitation facilities at School 125 to a committee comprising the school Principals, local Corporators, Community Plumbing Challenge organizing team, and other school staff.

“We took all the designs to the school principals and school committee. They gave very good feedback, asked many questions, and we tried to work with them to come up with not one design – we didn’t have one overall winner – but the best parts of ALL designs. So it’s fair to say that every team had something in their design that will contribute to the final solution.”
– Paul Pholeros

Following feedback from the committee, and several intense sessions of planning and reorganization, Teams collaborated to design and construct a new hand wash facility over two-and-a-half days. Features of the final design solution included:

- A new tank.
- Two more hand washing troughs (with correct slope) and 25 hand washing taps added
- Push taps used in order to reduce water wastage.
- New pipes added
- PVC pipes used due to the fact they do not rust, were cheaper to buy and had little or no value in terms of theft/vandalism.
- Pipe diameter increased to 32mm for the main input, and 25mm for the tap branches to improve water flow. Pipes positioned on the wall, making them easier to replace.
- An extra trough added in each toilet area, making it easier to wash hands after using the toilet. Wastewater would flow from this trough to flush urinal troughs in the adjoining toilet area.
- Additional pipes and taps in order to flush the urinal walls.

The above solution implemented at School 125 considered ease and cost of maintenance, and the use of locally available materials.

Digital Hub

A critical aspect of the Community Plumbing Challenge was creation of high-quality communications materials to explain the design and development of works onsite, and leave behind a set of practical resources such as site plans, drawings and 3D models that can be reused by other schools or Community Plumbing Challenge hosts.

The Digital Hub space was established in the Orange Tree Hotel, located directly opposite School 125 in Mukti Dham. It was manned by a group of 3D CAD (Computer Aided Design) developers from the DSK International Campus in Pune, who were responsible for collaborating with the four Teams to create a range of 3D animations visualizing the school building, hand wash facilities, and functionality of parts involved in the new installations. Their involvement was
organized through the international Autodesk Education ‘Student Expert’ community, and their presence in Nashik was a direct result of the innovative Autodesk–WorldSkills Global Partnership.

Working alongside the Autodesk team were a student media crew from the School of Science and Technology, Singapore (SST). This team, numbering two teachers and four young students (all of the students being under 18 years old) were responsible for filming and editing a wide range of footage to tell the story of Community Plumbing Challenge 2015.

Two excellent short films were produced during the four days onsite, which can be seen here:

Education video (“From Community Plumbing Challenge, 2015: Nashik, India”): https://youtu.be/7HeEru2VwqM
Highlights video (“We are Team School 125.”): https://youtu.be/E6--zHRtXR4

Community Forum

The Community Plumbing Challenge project culminated on the 5th Nov (day four) by opening the doors of School 125 to special guests from the Nashik Chapter of the IPA.

Finally, all visitors gathered in the Digital Hub space to enjoy a short presentation from each Team – followed by a focused question and answer session – on four separate aspects of the CPC project: Design (presented by Team India), Education (presented by Team Basque Country), Plumbing and Sanitation (presented by Team Australia), and Environment and Health (presented by Team USA).

World Plumbing Council Chairman and Indian Plumbing Association President Sudhakaran Nair welcomed...
All present, while Nashik City Commissioner Dr Praveen Gedam also addressed guests and presented prizes to each of the project participants, which included World Plumbing Council medallions, commemorative trophies, and other tokens of thanks from School 125 and Healthabitat.

Healthabitat Director Paul Pholeros revealed the highest scoring team - based on the detailed assessment scheme that had been designed to WorldSkills International standards - to be Team USA.

Next steps

The experience gained across the partner organizations responsible for delivering the project now gives us the potential to expand a Community Plumbing Challenge programme in schools throughout India.

The project utilized some of the very best international technical expertise, along with inputs available at the local level: very importantly, from a youth perspective. This is a model that can be replicated elsewhere, and the Community Plumbing Challenge organizing teams are now on hand to discuss further with any interested parties.

Crucial for the programme going forward, when and wherever it is next presented, is continuing to engage the knowledge and expertise of local people, and using locally available tools and materials to define best solutions. Final decisions must and will always come from key community stakeholders.

In this way Community Plumbing Challenge offers a unique crossover between PM Modi’s Swachh Bharat and Digital India initiatives.

Call to action:

Now the first Community Plumbing Challenge has been completed, we want to ask for your opinions and ideas! How do you believe we can enhance and grow Community Plumber Challenge from here, across India, together? We urge you to consider ways in which your contacts and resources can combine to replicate this project in ways that YOU need... from local, to regional, to national levels.

1. In the playground, school children pass a glitter-covered balloon around in a circle, illustrating how easily germs can be spread. Credit: Alan Gwee

2. Team USA’s Jill Vande Boom leads a game with schoolchildren to show them the amount of dirt that can remain after handling items that are lying on the ground. Credit: Alan Gwee

3. During the four days of Community Plumbing Challenge 2015, the Autodesk Student Expert Team developed an interactive 3D model of the entire School 125 site.

4. Exploded view of new taps installed in the hand wash areas; an interactive visual aid for maintenance purposes.

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Exploded view of new taps installed in the hand wash areas; an interactive visual aid for maintenance purposes.
With the use of Autodesk technology, we are really aiming to enhance the visual aspect of the project the students are working on. Our Autodesk Student Experts created 3D models of the entire school itself, so that we can see what it looks like now, and visualise what the final design will look like before it is even built.”

Matthew Bell, Autodesk

“We played a game on the playground with a ball and glitter. This represented germs, and how easy it is to pass germs on to others. It doesn't just affect you, but others as well... We have been able to work together with other cultures, and it has been a good experience for us!”

Ruben Garcia Valenzuela and Daniela Rojas, Team Basque Country

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