



2015 YEAR IN REVIEW





INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS

The International Association of Plumbing and Mechanical Officials (IAPMO) was founded on May 17, 1926 with the mandate “to advance the latest and most improved methods of sanitation; to promote the welfare of and harmony between the owner, the builder, and the craftsman; to accomplish a uniformity in the application of the provisions of the ordinances; and to promulgate the mutual benefit of the members.”

The IAPMO Group focuses its comprehensive capabilities in the technical aspects of the plumbing and mechanical industries through its extensive knowledge base, which includes regulators, professional contractors and manufacturers.

Comprised additionally of six different business units, The IAPMO Group is truly the one-stop shop for all plumbing and mechanical code and product compliance.



INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS – INDIA

The International Association of Plumbing and Mechanical Officials (IAPMO) have a strong cooperative presence in the nation of India and partnered with the Indian Plumbing Association (IPA) to develop a Uniform Plumbing Code for the nation.

The registrar of companies of India approved the establishment of IAPMO Plumbing Codes and Standards India Private Limited, to be known as IAPMO-India. IAPMO and the IPA, both members of the World Plumbing Council (WPC), agreed upon a comprehensive plan to work together to establish a model code of plumbing installation and maintenance for all of India, the Uniform Plumbing Code – India. The IPA Code committee worked with IAPMO staff in creating a document that recognized and utilized proven international concepts, always taking into consideration the proven plumbing practices within India.



THE INDIAN PLUMBING ASSOCIATION

The Indian Plumbing Association (IPA), established in 1993, is the apex body of Plumbing professional in the Country. Set up with an objective to promote advancements in plumbing and the building service industry, IPA has successfully created a forum for exchange of ideas and dissemination of information amongst its members. As a member of the World Plumbing Council, it encourages its members to achieve and maintain high standards of workmanship.

IPA's membership includes architects, builders, plumbing consultants, plumbing contractors, plumbing product manufacturers, traders and planners. IPA also conducts conferences and exhibitions throughout India and publishes the monthly magazine Indian Plumbing Today.

The idea is to make local plumbing professionals aware of issues, problems and prospects in the industry. IPA has succeeded in creating awareness about the need for safe plumbing, and is now ready to assist the Indian professionals with improving their skills and expertise.



GP Russ Chaney

IAPMO Chief Executive Officer

“We are absolutely delighted to provide this annual Year-In-Review for 2015 as our IAPMO India staff did a fantastic job in providing much needed educational services and in so doing set a record for corporate growth in this region of our world. I have a high degree of respect and admiration for the IAPMO India staff who are on the front lines of IAPMO’s efforts to provide much needed education and technical support.

Of course I’m also mindful that 2016 provides IAPMO and the Indian Plumbing Association to look back on a very successful 10 years of cooperation and I’m personally grateful to Sudhakaran Nair and the IPA National Executive Committee who have supported us along the way. The best part of our relationship is that it has stood the test of time and we are well placed to continue onwards for the betterment of the India plumbing industry and of course society. I have been truly honored to have had a small role in achieving great success in India over these past ten years.

I’m looking forward to my next trip to India so that I have the opportunity to support the exemplary efforts of the IAPMO India staff, our partners in India and of course the longterm efforts of the World Plumbing Council and our chairman, Sudhakaran Nair. I wish you all great happiness, professional success and good health!”



Sudhakaran Nair

President, Indian Plumbing Association
Chairman, World Plumbing Council

Dear Friends,

I am delighted to write this message for the 2015 Year End Review of IAPMO-India.

The IPA-IAPMO collaboration that began in 2006 illustrates what two like-minded organisations can achieve through collective efforts. The platform for such collaboration was offered by the World Plumbing Council in 2005; true to its mission of “Uniting the World Plumbing Industry”.

During the past nine years, IPA and IAPMO succeeded where probably no other trade association in the Indian Construction Industry has. Five plumbing codes to current global standards have been published, fulfilling the long cherished dream of every plumbing professional in our country. Unlike the publications hitherto available to them, the IPA-IAPMO codes and standards are updated and re-published regularly in three year cycles.

The Plumbing Education to Employment Programme (PEEP) launched by the partnership aims to create trained professionals with skills comparable to their counterparts from developed nations. The first ever group of civil engineering graduates with specialized plumbing education certified by IPA-IAPMO, joined the construction industry this year.

The success of ‘Community Plumbing Challenge’ (CPC) conducted at Nashik in collaboration with other renowned global bodies was another programme the two organizations undertook in 2015. The CPC is our effort to contribute towards the noble national mission of providing clean potable water and safe sanitation to the under-privileged citizens of India.

I and my colleagues at IPA are grateful to our colleagues in IAPMO for their continued support towards our efforts “To Redefine Plumbing Standards in India” and look forward to work together over years to come.

With Warm Regards,

SUDHAKARAN NAIR
President, Indian Plumbing Association
Chairman, World Plumbing Council



Megan Lehtonen

Senior Vice President of International Business Development

For nearly one hundred years, IAPMO has focused on its core vision – to ‘Live by the Code’ and the philosophy that far greater things can be accomplished together, collectively, than individually. There is no stronger truth to that than throughout the global marketplace. IAPMO has been growing at exponential pace in developing markets, because of this core philosophy and our strong in-country partners. In addition, rapid growth of international trade has resulted in the development of product and service standardization across all industrial sectors. With our foundation of code and standardization knowledge, we are ready and able to assist, enhance, learn from, and grow together with our partners. There is no end to the achievements that can be reached with this type of collaboration. But more important, perhaps, is the collective power of those from outside the industry championing the necessity of the work that is being done by IAPMO and our great partners the world over.

At a recent event hosted by the renowned Indian Plumbing Association (IPA), a heart surgeon took the podium to talk about his reflection on the similarities between heart surgery and plumbing. Dr. C N Mankunath, Director & HOD of Cardiology at Sri Jayadeva Institute of Cardiovascular Sciences and Research, gave an empowering talk about his personal experience and how he likened the heart doctor to the plumbing ‘doctor’ – both dealing with the pressure and flow of liquid and the necessity of the education and commitment necessary to ‘repair’ systems to save lives. Dr. Mankunath reiterated the need for us all to learn from, and work, together. In his own hospital, in which he has performed the highest number of his innovative balloon mitral valvuloplasties throughout India, he took this view and principle to heart and demanded an audit be conducted on the water being utilized. With the enhancement of the system, and the implementation of recycled water for all toilets – the hospital water bill went from 20 lakhs to 8 lakhs – more than cut in half from this foresight.

Working together, from trade to trade and country to country, we will continue to combat the global water crisis, and the need for clean water and safe sanitation for all.

Indonesia is a great example of a country at the forefront of the standardization movement. With the dedication and push to fast track the publication and implementation of the country’s SNI 8153:2015 – National Plumbing System Standard, based on IAPMO’s Uniform Plumbing Code, Indonesia is well on its way to implementing the required systems to bring clean water and safe sanitation to its citizens. It was not only the development of this standard (SNI), but the vision of the Standards Body (BSN) and its leaders to also encourage and support the incorporation of the

necessary education and training components, as well as the testing and certification of products, to round out the full suite of services to ensure a sound system.

The work accomplished this year in Indonesia alone is tremendous. A few exciting pilot projects through regional government offices are being prepared to show the real life impact of the work being done. It will be a great day when the word ‘plumber’ resonates throughout the ASEAN communities, coupled with the educated and certified workforce to the future mandated standard. The Asian Pacific region – and the upcoming ASEAN Economic Community Law and Policy that comes into place by the end of the year, has perfectly positioned IAPMO, and our partners, to best implement the full circle of standardization into each of these markets.

IAPMO India doubled its growth in 2015, under the leadership of Managing Director Neeta Sharma, and thanks to the entire dedicated team of passionate individuals, experts in their fields. And the potential within India and the landscape remains an equally encouraging initiative, albeit the focus within India to date has been more industry driven, than mandated. With the decade long partnership of the Indian Plumbing Association, IAPMO has been strongly positioned to bring about an unparalleled self regulated cultural advancement. As a business unit, this has been IAPMO India’s strongest year to date since its inception in 2007. IAPMO INDIA has been building on the value of training and education, together with the overall market’s understanding of the need for certification. With this progress, India continues to grow into a practical solution for clients in the Asian region.

All of this could not be possible without our partner, IPA, who together will continue to push through the process to ensure that code uniformity and workforce training and development are of the utmost importance. With a total of nine developed and released publications within the Indian marketplace over the past decade, all based upon the internationally-recognized Uniform Codes, IAPMO INDIA has certainly dug in for a long, exciting journey ahead – with a goal for a safer, sustainable India.

It is a global truth, that the power of the collective, working together, will yield exponential results. As connectivity and global capabilities continue to increase at the highest rate in history, the world will open up to innovation. We look forward to servicing IAPMO clients and end users by expanding our footprint to all corners of this incredible world.



Neeta Sharma

Managing Director, IAPMO India

One of the major events in 2015 was Community Forum' of an international competition that was a multi-day skills event held in Nashik during November 2-5, 2015 in Nashik, India. It was designed to bring together teams of students from around the world, to focus on technical solutions to the water and sanitation challenges that India faces. Last year's pilot competition held in Singapore in association with Singapore International Water Week 2014 was a huge success. This year's event was hosted at an inner-city Nashik Municipal School, presenting a collaborative new programme with the potential to scale up across the local and regional school system.

This competition was sponsored by international organizations that are dedicated to the sustainable development of water and sanitation services around the globe, such as: the World Plumbing Council, International Association of Plumbing and Mechanical Officials (IAPMO Group), the World Skills Foundation, the Indian Plumbing Association, and RMIT University (Australia). We recognize the complexity of the water and sanitation crisis that India faces and are extremely supportive of Prime Minister Narendra Modi's recent efforts and his commitment towards Swachh Bharat (Clean India) goals.

During the competition, the international student teams worked with local community stakeholders to design, produce and install sustainable solutions to problems of water quality and supply and sanitation in the host school. This gives us a new direction to tread on- to upgrade and create sustainable toilets in existing schools and educate young children on best hygiene practices!

An ambitious project named of Kerala named State Skill Development Project is to equip its young population with skills in cutting edge sectors in order to effectively alleviate the unemployment problem in the state, complementing NSDC mission to meet the demand of increased skilled manpower to sustain the industrial growth and thereby the economic growth of the nation. The project combines both preventive (Additional Skill Acquisition Programme - ASAP) and curative approaches (Additional Skill Enhancement Programme).

Through this project, IAPMO India has signed an agreement with Government of Kerala to develop competent manpower in plumbing sector, to offer skill oriented courses in plumbing Sector which is valid till 31st July 2016. Over 800 students have benefited from

this training through Skill Development Centres spread across all districts of Kerala which were recognized by Government of Kerala. The first batch of Apprentice Plumbers have successfully completed the programme and interested students have been suitably placed to, at as high a salary as Rs 14,000/- per month! This will surely fill huge gap of skilled manpower in the Construction Industry.

A better way of utilizing CSR funds is to use it for skilling the unemployed youth and up skilling professionals for benefit of the industry and professionals. One such project of Federal Bank is presently running our programmes on Plumbing & Mechanical in Cochin, which is soon to be translated across the country.

Various Universities have come forward for Mechanical Education to Employment Program (MEEP). Our MoU with ISHRAE to mutually promote Education programmes by jointly conducting them in various Centres of Excellence of ISHRAE is in different stages of discussions.

Classified WEP-I mark brought in for the benefit of manufacturers complying to any National/ International Standard for a range of water consuming Products to be certified for Water Conservation as per requirements of WEP-I 2013, continues to attract the industry. Modifications in Certification Policy, for Lab approvals, have also been accepted by agencies and more and more manufacturers are seeking Lab Approvals. Surely, industry today is not mature enough to make this as a Mandatory requirement by Implementing Agencies; however, any Green Project should mandatorily bear Third Party Certified products.

I appeal to all the stakeholders of construction industry and users in particular to collaborate, support and acknowledging the NEED of a sustainable environment by going in for Third Party Certified Products, Third Party Inspections of the Projects and Skilled and certified personnel, thereby facilitating India to be the global leaders and make each city a Smart and Sustainable for the generations to come!



Dr. Abdul Matheen, Ph.D

Director Mechanical, IAPMO India

“Transforming India through industry oriented, Code based Education to Employment Programs”



Background

A Overview of Indian Market

Indian construction industry employs more than 30 million people and its total market size is estimated at Rs. 500,000 crores (approx. 75 Bn USD). The level of a country's development is reflected by its infrastructure. The need for infrastructure development is fuelled by the increased demand of the construction industry in India.

With the government's continued focus on urban development, the real-estate industry is also poised for tremendous growth. Total infrastructure expenditure during the current Twelfth Five Year Plan (2012 -2017) nearly doubled to USD 1,025 billion from previous plan of USD 514 billion- this auger well for the construction industry. It will also bring new business opportunities for Plumbing and HVAC & R Industry & allied services.

The Need

Millions of informal workers in India struggle to find employment and work on a temporary basis at a far low wage, without health insurance or other benefits, and at the whim of employers. At the same time, the growing middle-class, mid-sized business community, and active construction sector has a strong demand for qualified, reliable, skilled workers; but finding and training workers is a time-consuming hassle.

Also the shortage of skilled workforce across many industries is emerging as a significant and complex challenge to India's growth and future. The growing skills

gap is reflecting slim availability of high quality professional in India and the galloping pace of the country's construction and allied service driven economy, which is growing faster than most countries in the world. As businesses propose to double and treble their workforces and India Inc. strives to maintain its position in the global marketplace, it has become imperative to prepare and plan for a world-class, competent, talented and innovative workforce.

IAPMO India Role

IAPMO India is dedicated to support and provide informal sectors construction and service sector workers with institutionalized access to jobs, enhanced incomes, and financial and social services. IAPMO India does this by filling the market gap between the supply and demand of trained workers in Mechanical HVAC-R sector. With this market linkage, IAPMO India also offers social benefits that informal sector workers are largely excluded from. IAPMO India has both skills and knowledge to offer to Indian Plumbing and Mechanical HVAC-R Industry, aiming to empower India's youth which is a growing mass of largely under-educated, un-employable, especially young engineering graduates and people who aspire for a better life but don't have the means to get there. Why? Because they aren't qualified for the job market.

IAPMO India's established training & skill development programs and continuing education system will provide an institutional mechanism to facilitate greater and active participation of the industry, and to better link skill development with the country's employment demands.

IAPMO India's cutting-edge concept of Education to Employment Programs (PEEP/MEEP) in both Plumbing and Mechanical HVAC-R domain, undertaking training to the youths at the entry level industry in order to tackle the impeding shortage of knowledge workforce. This strategy has successfully provide fresh Engineering Graduates, Diploma Holders, ITI passed technicians and high school dropouts to have Job oriented skills with dual-certification and This has greatly mitigate the existing shortfall of trained professionals at entry level for which, companies today have spent a lot. IAPMO India has firmly installed Plumbing and Mechanical & HVAC-R Education System to Indian citizens. MEEP/PEEP Graduates of the multi-level education programs created will be given the option of obtaining professionally qualified certifications with the following credentials:

Director Mechanical Message

The objective of IAPMO India's training and skilling program is to train and equip Professionals in the field of Mechanical HVAC-R Covers the following domains: Design, Installation, Commissioning, Operation and Maintenance, Sales and Service Industry. IAPMO India trained and certified professionals equip sufficient knowledge of respective codes and standards with up-to-the-minute knowledge of related codes & standards applicable to the mechanical HVAC-R. these PEEP & MEEP programs are designed keeping in mind the present and future global industrial requirements, so that skilled man power of the country may become enable to compete in the global market.

Our Mechanical HVAC-R domain are covered under the umbrella of MEEP (Mechanical Education to Employment Programs) which are again classified in to two categories, viz. Long term and Short term Programs, listed below:

(a) Long Term

1. Mechanical HVAC-R System Design Engineers (MSD)/Mechanical Managers Academic program (MMAP)
2. Mechanical Supervisors (MS) Academic program
3. Mechanical Technicians (MT) Academic program

(b) Short term HVAC-R Technicians Programs

1. Certificate Course in Basic Refrigeration & Air Conditioning.
2. Certificate Course in Repair & Maintenance of Refrigerators & Deep freezer.
3. Certificate Course in Repair & Maintenance of Water Cooler & Bottle Cooler.
4. Certificate Course in Repair & Maintenance of Domestic Air Conditioner.
5. Certificate Course in Repair & Maintenance of Car Air-conditioning unit.
6. Certificate Course in Servicing & Maintenance of Central Air Conditioning Plant.
7. Certificate Course in duct design Installation and fabrication.
8. Certificate Course in Mechanical HVAC-R Installation, Testing and Commissioning Technicians.
9. Certificate Course for Operators for Central Air Conditioning Plant.
10. Certificate Course in Mechanical HVAC-R Sales & Service Engineers, Supervisors and Technicians.

MEEP Benefits

- Recognition to International body
- Industry-Institutional interactions
- World class Mechanical-HVAC-R education and training
- Better mechanical installations ensuring energy conservation,
- Enhanced IAQ, safety of public and structures and reduced maintenance
- Energy efficient installations, increased efficiency and productivity, better reputation



Charles Gross

Director of India Product Certification

IAPMO India's product certification program continues operating as an ISO/IEC 17065 "General Requirements for Bodies Operating Product Certification Systems" standard based system whereby products are certified to their performance standard and to the products' respective code, such as the 2012 Uniform Mechanical Plumbing Code - India (UMC-I) and/or the 2014 Uniform Illustrated Plumbing Code - India (UIPC-I).

In 2007 IAPMO India formally established a successful partnership with the Indian Plumbing Association (IPA) which continues today, but the year earlier in 2006 was when IAPMO initially visited India to discuss partnership with the IPA as well as develop plans to jointly publish the first India plumbing code ever, namely the *Uniform Plumbing Code - India (UPC-I)* which was published in the following year, 2008.

Although the 2008 UPC-I was a brand new code in India, little by little it became better known each day and used by industries, and subsequently underwent update in 2011, and most recently in 2014 to its updated published current version, the *2014 Uniform Illustrated Plumbing Code - India (UIPC-I)*. This latest version was announced and released for industrial use during the 18th Indian Plumbing Conference last November 2014 in Bengaluru, India. This new 2014 UIPC-I supersedes all previous UPC-I versions, and is used to evaluate and to certify new products as well as to renew existing certified products. As such, certified products now begin to display the UIPC-I mark of conformity which replaces the conventional UPC-I mark of conformity previously used. Manufacturers have been asked to replace the UPC-I mark with the UIPC-I mark of conformity on their certified products by the end of 2015.

Complementing development of the first published 2008 UPC-I, IAPMO India and the IPA continued joint efforts to develop other related and complementing industry codes (that also undergo subsequent update every three years), which are as follows:

- 2011 Uniform Swimming Pool Code - India (UPSC-I),
- 2012 Uniform Solar Energy Code - India (USEC-I),
- 2013 Water Efficient Products India (WEP-I), and
- 2013 Green Plumbing Code Supplement - India (GPCS-I).

All above documents are available on IAPMO India's publications page at www.iapmoindia.org/Pages/publications.aspx.

Additionally, IAPMO India and the IPA continued working together beyond development of the above codes to also structure and initiate plumbing training and educational

programs (known as 'Plumbing Education to Employment Program,' or 'PEEP') with interested academic institutions throughout India for designers, contractors, engineers, and students whose combined graduates now exceed 2000 since the programs' inception in 2009.

Similarly, IAPMO India also began partnerships with other professional organizations such as the ISHRAE (Indian Society of Heating, Refrigerating and Air Conditioning Engineers, <http://www.ishrae.in>) to develop the first ever *2012 Uniform Mechanical Code - India (UMC-I)*, used primarily for design, installation, maintenance and use of heating and cooling products used globally.

Since the start of 2015, a total of thirteen different product certifications made up IAPMO India's product listing directory website at <http://www.iapmoindia.org/Pages/pld.aspx>, but the following nine new Classified WEP-I, UIPC-I, UMC-I, USEC-I, and WEP-I/UIPC-I IAPMO India certifications (from the three major manufacturers below) have been added to this directory this year which raised the total listings to twenty-two, as follows:

- CERA Sanitaryware Ltd. (Classified WEP-I, Faucets),
- KiTEC Industries (India) Ltd. (UIPC-I, Polyethylene/Aluminum/Polyethylene (PE-AL-PE) Composite Pipes),
- KiTEC Industries (India) Ltd. (UMC-I, Polyethylene/Aluminum/Polyethylene (PE-AL-PE) Composite Pipes),
- KiTEC Industries (India) Ltd. (UIPC-I, Polyethylene/Aluminum/Cross-linked Polyethylene (PE-AL-PEX) Composite Pipes),
- KiTEC Industries (India) Ltd. (UMC-I, Polyethylene/Aluminum/Cross-linked Polyethylene (PE-AL-PEX) Composite Pipes),
- KiTEC Industries (India) Ltd. (USEC-I, Polyethylene/Aluminum/Cross-linked Polyethylene (PE-AL-PEX) Composite Pipes),
- Roca Bathroom Products Pvt. Ltd. (Classified WEP-I, Faucets),
- Roca Bathroom Products Pvt. Ltd. (UIPC-I, Ceramic Plumbing Fixtures), and
- Roca Bathroom Products Pvt. Ltd. (WEP-I/UIPC-I, Ceramic Plumbing Fixtures)

Conventional standards were used for CERA and Roca's product certifications, but the above KiTEC certifications utilized KiTEC's standards they submitted for development (for product testing and certification purposes) by IAPMO's Standards Department (www.iapmostandards.org) as follows:

- IAPMO IGC-India 306-2014, *Brass Compression Fittings for Multilayer Piping Systems*,

Director of India Product Certification

- IAPMO IGC-India 308-2014, Polyethylene/Aluminum/ Polyethylene (PE-AL-PE) Composite Pipes, and
- IAPMO IGC-India 309-2014, Polyethylene/Aluminum/ Crosslinked Polyethylene (PE-AL-PEX) Composite Pipes.

Our new Classified WEP-I product certification program was introduced to industries last year which also received good welcome by existing and new certification licensees since this program was developed for water consuming products addressed in the WEP-I specification (faucets, EWCs, shower heads, urinals, etc.) that were not certified to a code such as the UIPC-I, UMC-I or USEC-I codes but that do comply to other standards such as an India Standard (IS), or an International Standard. These products can undergo evaluation for a Classified WEP-I star rating after having their water consumptions measured at an IAPMO recognized laboratory. Manufacturers continue to express their appreciation of this new WEP-I program since it also helps to expedite the distribution of their Classified WEP-I certified products into their various markets. Again, to help distinguish WEP-I product certifications, the following two different WEP-I star rating marks of conformity continue to be used:



For UIPC-I or UPC-I certified products



For products not UIPC-I or UPC-I certified but do comply to an India Standard or to an International Standard

Product tests intended for certification are to be made at an IAPMO recognized test laboratory, such as at one of IAPMO R&T Laboratories (China, or USA), or by a manufacturer at their IAPMO India recognized in-house test laboratory. This latter program was recently approved by IAPMO's upper management for implementation of IAPMO India's "Manufacturer's In-House Test Lab Recognition Program" that gives manufacturers an option to test their own products for subsequent product certification. The feedback from manufacturers regarding this new program continues to be positive as more welcome this opportunity which helps them in many ways and more primarily helps them save a lot of time when it comes to testing their products. To date, five different manufacturers' laboratories have successfully undergone audits to standard ISO/IEC 17025 "General Requirements for The Competence of Testing and Calibration Laboratories" to obtain IAPMO India recognition of their in-house test laboratories, and there appear other new manufacturers who have expressed similar interests.

Based on manufacturer's interested inquiries, new product certifications appear likely to continue along with recognition of new manufacturers' in-house test laboratories, all of which continue to confirm and manifest concerns, contributions, and support from various manufacturers for growing production of highest quality certified products and especially increased production of enhanced sustainable water conservation products. These efforts help to enhance and strengthen society's health, safety and welfare whereby this increased awareness for production of more certified water conserving products is one of the main reasons that IAPMO's upper management approved implementation of IAPMO India's "Manufacturer's In-House Test Lab Recognition Program" as well as IAPMO India's new 'Classified WEP-I' product certification program as aforementioned.

As each day goes by, the conscientious and awareness levels continue to rise and grow for the installation and use of more certified water efficient products to the 2013 *Water Efficient Products India (WEP-I)* specification. Using WEP-I/UIPC-I and/or Classified WEP-I certified products will help to promote and to enhance sustainable water conservation measures throughout India and other neighboring countries. As a result of both these WEP-I certifications, architects, consumers, contractors, engineers, plumbing instructors, plumbing designers, and inspectors alike continue to be assured that these certified products comply with every standard and code governing their use throughout India.

Now that you see where IAPMO India started and its progress made to date of our product certification services, we kindly ask for your continued trust and opportunities to serve your entire product testing and certification needs, as we're continually thinking of new ways to further enhance our services in an effort to serve you much more and better. There's never been a better time than today to join IAPMO India's directory of certified products and begin marketing your products within India's rapidly emerging market via IAPMO India's new in-house product testing and certification programs. The installation and use of IAPMO India certified products help give all societies a greater level of assurance and confidence which also help to protect and optimize the public's health, welfare, and safety, as compared to the general uncertainties that exist in the use of uncertified products. Please peruse IAPMO India's web site and its product certification programs at <http://www.iapmoindia.org> and let us know how we may help you to better market your products.



Swathi Saralaya

Manager – Technical & Training, IAPMO India

IAPMO India has developed a good understanding of our own vision and work flows in the past 2 years under the able leadership of Ms. Neeta Sharma.

The year 2015 witnessed Community Plumbing Challenge, first ever and unique project inspired by "Swachh IAPMO India has developed a good understanding of our own vision and work flows in the past 2 years under the able leadership of Ms. Neeta Sharma.

The year 2015 witnessed Community Plumbing Challenge, first ever and unique project inspired by "Swachh Bharath" which aims to contribute to the broader public consciousness against open defecation and ensuring access to water and sanitation for all. The four days design , installation, education and training has given new ideas to implement community based projects that address water and sanitation issues indentifies by community leaders. My presence in the Nepal Design Sanitation Studio helped to understand the objectives behind community based solutions for water and sanitation issues in rural parts of the world.

Under Acquired Skill Acquisition Programme, IAPMO India' project with the Govt. of Kerala, 3 batches of classroom and practical training on Plumbing has been completed. The project has presented with many opportunities and challenges to develop IAPMO India's expertise on training of plumbers. The project has enhanced the employability potential of over 900 students. More than 50 students are placed in Sobha Developers in sites spread across Kerala and Karnataka.

Overall it was a great experience. The future looks increasingly bright for IAPMO India!



○Bahadurgarh

HSIL Plumbing Products In-House Testing Laboratory

IAPMO India Recognizes HSIL Plumbing Products In-House Testing Laboratory





MoU with Sulabh International Social Service Organisation

MoU with Sulabh International Social Service Organisation



IAPMO India and Indian Plumbing Association have signed MoU with Sulabh International Centre for Action Sociology (SICAS) for running Plumbing Apprenticeship Programme at its campus in Delhi. Ms. Neeta Sharma, Managing Director IAPMO and Dr. Indrani Mazumdar, Chairperson, SICAS are seen signing the MOU.



**IAPMO India, IPA and Kohler
Plumbing Academy**

IAPMO India, IPA and Kohler Plumbing Academy



Inauguration of KOHLER Plumbing Academy

IAPMO India, IPA and Kohler India entered into a MoU on 28.05.2015 for running Plumbing Technology Programme (PTP). The Plumbing Technology Programme under Plumbing Education to Employment Programme (PEEP), is a comprehensive programme designed to provide individuals with the skills to apply a broad range of plumbing principles. Through this course of study, an individual will learn how to install, repair and maintain a variety of piping systems, plumbing fixtures and other equipment generally associated with water distribution and waste water disposal; and learn the basic principles and code requirements of typical plumbing systems.

The programme is most suitable to the practicing plumbers to upgrade their knowledge and skills by attending part time training, while they continue their earnings. It is also suitable for aspiring plumbers who want to join the main stream of plumbing.

Kohler India, in partnership with SNS Foundation, has inaugurated the Kohler Plumbing Academy in India as its stewardship initiative. The project has

been undertaken as a CSR initiative of Kohler in India wherein complete support shall be extended to the SNS Foundation Building in Gurgaon for the purpose of educating underprivileged youth and enabling them to qualify for employment opportunities in plumbing field. This shall in turn create a pool of qualified plumbers for the industry; in order to address scarcity of certified professional in this field.

At Kohler Plumbing Academy, students will undergo the regimens of a structured course which will help them acquire a different professional as well as personal dimension and also enable them to be considered as potential talent, both by the industry and commercial centers alike. The Academy offers two certification courses of IAPMO India and IPA's Plumbing Technology Programme:

a) **Trained Apprentice Plumber (TAP)**

Trained Apprentice Plumber (TAP) is a course in plumbing technology for aspiring plumbers, students who have passed 10th standard school exam and also for practicing plumbers

with a minimum qualification of 10th standard pass. This part is divided in Modules 1 to 4. After successfully completing all modules 1 to 4, students will receive a certificate: Trained Apprentice Plumber (TAP). This will establish the competency to install and repair the plumbing systems as per Uniform Plumbing Code-India (UPC-I).

b) Trained Master Plumber (TMT)

Admission to Trained Master Plumber (TMP) course is open to those who possess a TAP certificate. This part is divided in Modules 5 to 8. After successfully completing all modules 5 to 8, students will receive a certificate: Trained Master Plumber (TMP). This will establish the competency to undertake the installation of plumbing systems as per Uniform Plumbing Code- India (UPC-I).

The courses will follow formal syllabus and curriculum with course material in form of power point slides, text books, handouts as e-copies. One week training was also provided to the Academy Trainers at IAPMO India's Bangalore and Pune centers.

The SNS foundation will help mobilize students from under privileged areas for enrolment in "Trained Apprentice Plumber" course.



Training lab at KOHLER Plumbing Academy



Mr. Salil Sadanandan, Managing Director, Kohler Kitchen and Bath, India & Sub-Saharan Africa interacting with the students of Kohler Plumbing Academy

Speaking of the new CSR initiative adopted by Kohler India, Mr. Salil Sadanandan, Managing Director, Kohler Kitchen and Bath, India said, "Through this initiative we are committed to good governance, social responsibility and our drive to create and increase value for all stakeholders. The primary objective of Kohler Plumbing Academy will always be to provide young people with opportunities that will open doors for them professionally. Through the academy, we aim to provide high standard training which adheres to Kohler's parentage and world renowned brand principles."

About Kohler India

Kohler launched its innovative range of bathroom products including toilets, lavatories, faucets, bathtubs, whirlpools and showers in India in May 2006. With its business headquarters based in Gurgaon, Haryana, Kohler India is expanding its operations across the country.

About Kohler

Founded in 1873 and headquartered in Kohler, Wisconsin, in the United States, Kohler Co. is one of America's oldest and largest privately held companies. Kohler is a global leader in the manufacture of kitchen and bath products, engines and power generation systems, cabinetry, tile and home interiors, and international host to award-winning hospitality and world-class golf destinations. Kohler Co. employs more than 31,000 associates on six continents, operates plants in 49 worldwide locations, and has dozens of sales offices around the globe. The company and each associate share in the mission to contribute to a higher level of gracious living for those who are touched by the company's products and services.

IAPMO India and IPA

The aim of having a positive impact on the national health and to address the need for plumbing education in India, the Indian Plumbing Association (IPA), and the International Association of Plumbing and Mechanical officials (IAPMO) joined together to provide a framework for plumbing education and training.

The goal of the IPA- IAPMO India Plumbing Education to Employment Programme (PEEP) is to prepare plumbing professional at various levels in India to read, understand, interpret, engage and apply the provisions of the Uniform Plumbing Code-India (UPC-I), to plumbing designs, installations and maintenance of plumbing systems. The Uniform Illustrated Plumbing Code-India (UIPC-I) is a product of joint effort of the Indian Plumbing Association (IPA) and International Association of Plumbing & Mechanical Officials (IAPMO), with world headquarters in USA.

IAPMO India, in collaboration with IPA, has been conducting PEEP (Plumbing Education to Employment Program) since the last few years in India. After signing the MoU under PEEP many organizations are benefitted with developing trained manpower in the plumbing sector, providing better plumbing for better living and improved health & hygiene.

UIPC-I Awareness Program (UAP)

UIPC-I Awareness Program (UAP) is a workshop useful for those who desire introduction to Uniform Illustrated Plumbing Code-India (UIPC-I) and want to enhance their knowledge which may further their career. Reading a code book and self-studying is a lengthy process which many working professionals find difficult. A short 2 day UAP would be a great opportunity for them. The program is suitable for any building/plumbing professional having keen interest in learning and upgrading their knowledge and skills in plumbing based on the latest Plumbing Codes.



ROCA Plant Audit in Alwar

ROCA Plant Audit



ROCA team along Dr. Abdul Matheen, Director of Mechanical IAPMO India during closing meeting and handing over of the inspection report



- **13th Edition of Green Building Conference**
- **Cera Ceramics and Faucets In-House Lab**
- **Kohler India Plant Inspection and In-House Lab**

13th Edition of Green Building Congress, 2015 at Gandhinagar

The 13th Edition of India's flagship event on green buildings, Green Building Congress 2015 was held at Gandhi Nagar, Gujarat to further advance green building movement in the country. The event featured International Conference & Exhibition on Green Buildings.



Cera Ceramics and Faucets In-House Lab



Kohler India Plant Inspection and In-House Lab





- TOTO India
- LUBI Industries

TOTO India

Product Certification, Continuous Compliance Inspection, In-house Lab Surveillance audits and plant inspections as part of IAPMO activities



LUBI Industries

Team - LUBI Industries LLP during continuous compliance plant inspection held during 2015





- **ROCA In-House Ceramic Lab**

ROCA In-House Ceramic Lab Devas Plant





- **20th India Plumbing Conference**
- **Community Plumbing Challenge**

20th India Plumbing Conference, Nashik

Guests at the 20th Indian Plumbing Conference in Nashik, were given an exclusive overview of the upcoming Community Plumbing Challenge project by Ms. Megan Lehtonen



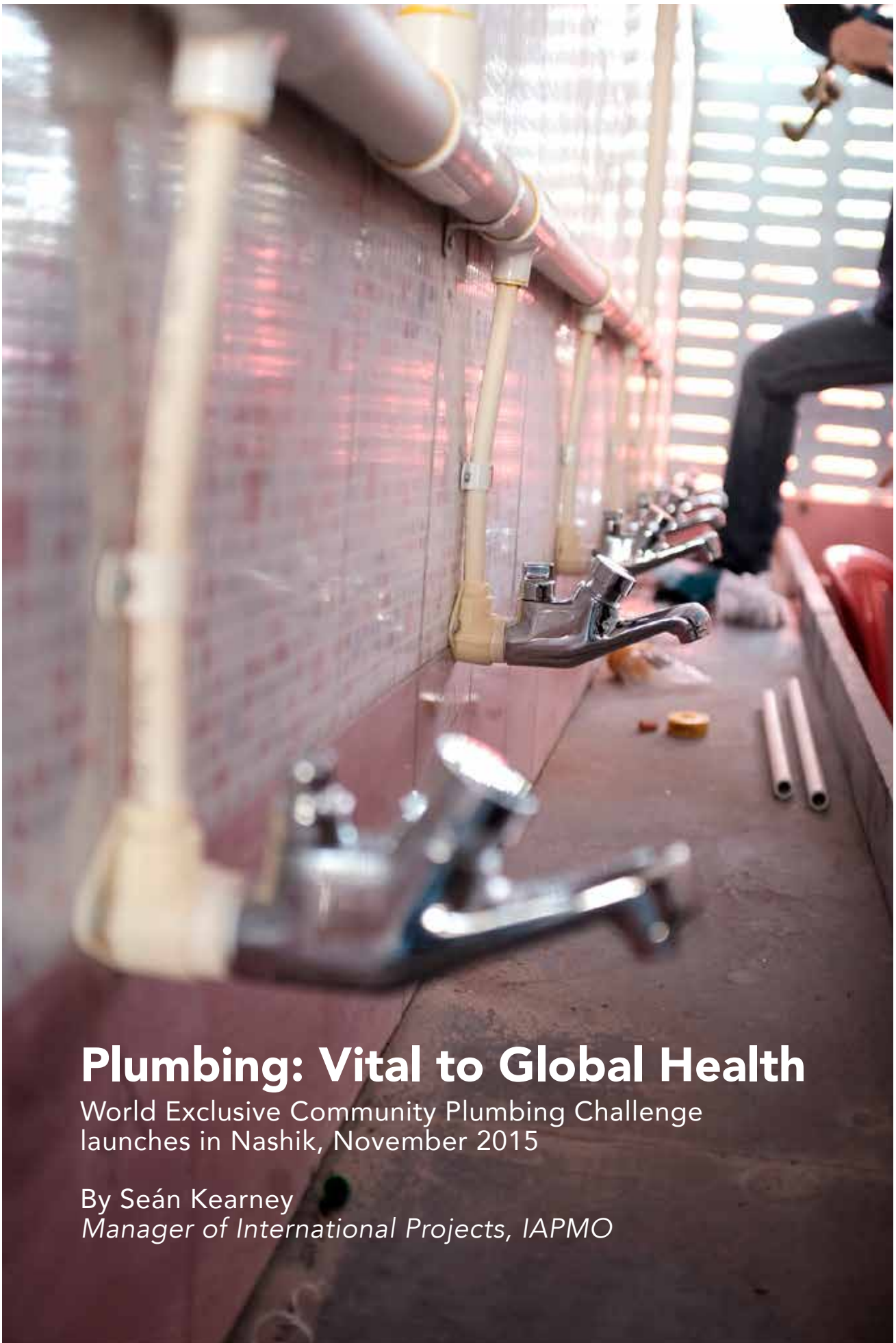
20th Indian Plumbing Conference was held at Nashik between 10th and 11th September with a central theme "Plumbing System for Emerging Modern Cities".



Pictured during the event from left to right : Mr. Avinash Laddha, IPA Technical Committee (TC) member, Mr. Subash Deshpande, IPA TC Member Mr. Gurmit Singh Arora, IPA National Executive Committee (NEC) Member Mr. Sudhakaran Nair, WPC Chairman, Ms. Megan Lehtonen, Ms. Anjali Singh, Mr. Milind Shete, IPA Nashik and Ms. Swathi Saralaya



Ms. Swathi Saralaya was recognized by the IPA for her contribution in making the "A Guide to Good Plumbing Practices" released during the event.



Plumbing: Vital to Global Health

World Exclusive Community Plumbing Challenge
launches in Nashik, November 2015

By Seán Kearney
Manager of International Projects, IAPMO

Introduction

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

Nashik was originally selected by the Community Plumbing Challenge organizing team (representing IAPMO, WorldSkills Foundation and Indian Plumbing Association) at the start of this year, due to the proximity of the upcoming Indian Plumbing Conference in September 2015. However, it was quickly decided that in order to achieve genuine impact the project MUST be hosted in a local community setting rather than as a showcase at the conference, and so the existing Nashik IPA School Sanitation programme was identified as a suitable platform to explore. The organizing team visited ten Municipal Schools across Nashik during three days in May 2015, and subsequently School 125 was selected as the most suitable location to host the pilot project.

The school is home to 400 students, between 7–15 years old, and 12 staff. The organizing team observed that the current washroom facilities were inadequate for the number of students that needed to use them, there were no handwashing facilities in the toilet areas, and – as water supply to the building was not frequent – it was hard to flush the urinals. As these sanitation issues are common to many Municipal Schools (not only in Nashik but in many other parts of the country) the pilot Community Plumbing Challenge 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 in the first week of September, 2015. This allowed almost two months for each group to research and prototype solutions for the handwashing facilities at School 125, as well as plan for delivery of class lessons and training to the schoolchildren on related themes of sanitation. 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>

Arriving in Nashik on Sunday 1st November, the Teams visited School 125 for the very first time that afternoon to inspect the handwashing facilities and other teaching/training areas. Early the next morning – Monday 2nd November (day one)– they were welcomed back by a 400-strong school assembly that featured a flag-raising and lamp-lighting ceremony, traditional dance, and music. Mr. Shanjay Chawan (Nashik Road Prabhag Sabhapati), Sau Sanjita Gaikwad and Mr. Ramesh Dohngade (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.



Members of Team USA – (l-r) Adam Koenigs, Jill Vande Boom and Miya Preston – arrive at the Express Inn Nashik after meeting with all other international participants in Mumbai on the morning of Sunday 1st November 2015. Credit: Alan Gwee



School 125 turned out in force to welcome the Teams on the first morning of Community Plumbing Challenge 2015. Credit: Anill Patil



Dignitaries, Teams, and School 125 community gather together onstage as Community Plumbing Challenge 2015 begins.
Credit: Alan Gwee



Sanjay Chawan receives Tilaka on arrival at School 125 for the Welcome Assembly, accompanied by local Corporators Ramesh Dohngade and Sau Sanjita Gaikwad
Credit: Anill Patil



Dignitaries convene for the lamp-lighting ceremony during Welcome Assembly.
Credit: Anill Patil



The Community Plumbing Challenge flag is hoisted in the School 125 playground... symbolizing the first time in the world!
Credit: Anill Patil



Paul Pholeros – Healthabitat Director and lead assessor for the Community Plumbing Challenge – takes time out during Team presentations.
Credit: Anill Patil



Team India's turn to present their detailed upgrade solution for the handwashing facilities to the School 125 committee on Day One.
Credit: Anill Patil

"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 handwash facility over the remaining two-and-a-half days of the event. Features of the final design solution included:

- A new tank added to the roof, in order to improve water supply.
- Two more hand washing troughs and 25 hand washing taps added, so water is available to more students.
- New troughs sloped, allowing water to run out quicker.
- Push taps used in order to reduce water wastage.
- New pipes added, to supply more water.
- 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 flushurinal 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. All four international Teams worked with staff, pupils, and local authorities to improve design, specification and maintenance of these important health-giving facilities.



Chairman of Nashik IPA and Team India Coach Milind Shete leads work in the handwashing area.
Credit: Benjamin Delaoutre



Swathi Saralaya of IAPMO India puts the finishing touches to new louvres added to help improve light, ventilation and privacy for the boys and girls toilets.
Credit: Alan Gwee



Project Manager Grant Stewart (left) debriefs Teams at the end of Day 3.
Credit: Anill Patil



Members of Team India (Lalit Kasawate), Team Australia (Aaron Bridger), and Team USA (Adam Koenigs) work together on the school roof to install a new water tank that will supply the upgraded handwash area.
Credit: Anill Patil

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 siteplans, 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, handwash 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. The team travelled to Nashik as part of the SST Global Citizen Programme, which encourages international cultural exchange and "seeks to encourage students to be active drivers of change and contribute to a just and sustainable world". The same students had previously volunteered to film documentary coverage of the pilot Water Innovation Challenge in Singapore in 2014, and seized the opportunity to follow the developing project to India this year.

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>

During the four days of the event, through use of the #CommPlumbing hashtag, the Community Plumbing

Challenge Facebook page connected to over 25,000 people across the world, sharing live updates and daily highlights from School 125. PM Narendra Modi commented during an official visit to Facebook HQ in California in October 2015 that social media provided a platform for people to "get the information they needed to know, from their peers" –the Digital Hub played a key role in creating such media in support of Community Plumbing Challenge 2015, and our social media channels will continue to share information and discussion as the programme continues to develop in the months ahead.

Community Forum

The Community Plumbing Challenge project culminated on the afternoon of Thursday 5th Nov (day four) by opening the doors of School 125 to special guests from the Nashik Chapter of the IPA. Guests were invited to inspect the new facilities at the school, meet and talk with the Teams onsite, and discuss more about the project management process with the organizing team.



*School 125 staff inspect the new facilities alongside visiting IPA Members on Day 4.
Credit: Anill Patil*

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). Each presentation sparked lively debate and discussion in the room, which welcomed around fifty guests.

This Community Forum was another critical aspect of the overall project structure, offering local IPA stakeholders the opportunity to examine and explore the project, while the international Teams gained further unique experience in pitching their ideas and opinions to local industry stakeholders.



World Plumbing Council Secretary Stuart Henry shares his thoughts during Team presentations at the final day Community Forum.
Credit: Anill Patil



Dale Fisher of Team Australia is awarded a medallion of participation by Sudhakaran Nair and Dr Praveen Gedam.
Credit: Anill Patil



Team USA demonstrate one of their classroom games for guests during the Community Forum.
Credit: Anill Patil



Sudhakaran Nair congratulates Team USA as they are crowned the overall winning Team for Community Plumbing Challenge 2015: (l-r) Adam Koenigs (Plumber), Peter Hollmaier (Plumber and Mason), Miya Preston (Designer), and Jill Vande Boom (Engineer).
Credit: Anill Patil

Following the Community Forum, guests reconvened at the Express Inn Hotel – Team ‘base camp’ for the week of the Community Plumbing Challenge – for a special Awards Ceremony and Farewell Dinner. 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.

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 Nashik, schools in other cities across Maharashtra, and on a larger national level.

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. It now represents an international resource that can be reused, adapted and driven from a local level: at School 125, a range of educational and training resources have been left behind in regard to public health awareness among the children, and in addition to upgraded washrooms, the small, practical actions shared with teachers and students will be continued and maintained. This is a model that can be replicated elsewhere, and the Community Plumbing Challenge organizing team are now on hand to discuss further with any interested parties.



Nashik City Commissioner Dr Praveen Gedam addresses guests at the Awards Ceremony.
Credit: Anill Patil



Team USA's Jill Vande Boom leads a game with school children that ends in showing them how much dirt can remain after handling items that are lying on the ground. Credit: Alan Gwee



In the playground, schoolchildren pass a glitter-covered balloon around in a circle, illustrating how easily germs can be spread on our hands! Credit: Alan Gwee

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.

Innovating further still, the cutting-edge digital resources that have been created in collaboration with the local Autodesk Education 'Student Expert' community mean that a range of free learning assets can be offered to schools and communities as the programme develops in the coming months.

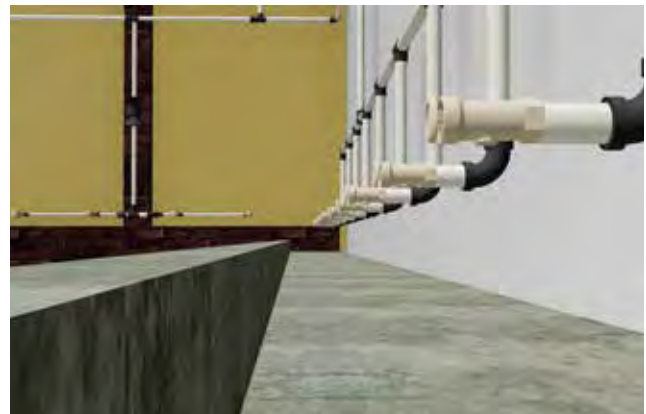
In this way Community Plumbing Challenge offers a unique crossover between PM Modi's Swachh Bharat and Digital India initiatives. The digital platform – simply explaining (what would previously have been regarded as) detailed technical information on water supply, better sanitation and facility maintenance to empower community leaders, teachers, and students – has the potential to become a part of India's Smart Cities initiative; once again, the organizing team will be exploring this opportunity in the next phase of the programme.



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.



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



Flyover view, transporting the viewer in and through new handwash troughs.



Flyover view, transporting the viewer in and through new urinal flushing system.

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 Plumbing 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.

Contact our team

India:

Swathi Saralaya - swathi.saralaya@iapmo.org
 Manager Technical & Training, IAPMO India

Milind Shete - nashik@indianplumbing.org
 Chairman, Indian Plumbing Association
 Nashik Chapter

International:

Seán Kearney - sean.kearney@iapmo.org
 Manager, International Projects – IAPMO

Grant Stewart - grant.stewart@iapmo.org
 Manager, International Projects – IAPMO



“When I grow up, I would like to be a Plumber. I will need a job and I want to help people so I feel good about myself.” – Preeti Kodi (11 years old)



“The Teams taught us about Plumbing, how to make strong walls properly, and how to make proper pipelines. They taught us how to treat dirty water and make it safe. They also taught us the importance of cleanliness, and how to keep us and our facilities clean.”

- Arbhaj Hussein (14 years old)
- Harstal Sanjay Jadav (12 years old)
- Pavan Yogesh Dondi (14 years old)
- Milind Takaran Ingoli (12 years old)



“By designing these facilities, we have built an example for other communities in India, and in other parts of the world; this design can be replicated, and can benefit and improve health conditions for schoolchildren. We have made many friends, we have learned many things – from plumbing to masonry and construction – it was a complete exposure, and a very good experience.”

Darshana Agrawal and Aakanksha Kapse, Team India Pictured, (l-r) Amrapali Kapadne, Aakanksha Kapse, Subhash Deshpande (Team Coach), Darshana Agrawal



“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 learnt today that if we don't wash our hands, then all sorts of germs will infect our hands. This is what causes the spread of all sorts of bacteria!"

– Sachin Sunil Punekar (10 years old)
– Kavita Ravat (9 years old)



"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

Back row, 3rd and 5th from left, pictured after the Basque Country team complete training exercises with older School 125 students, accompanied by Neeta Sharma (Managing Director, IAPMO India, centre)



"The greatest thing I will take away from the Community Plumbing Challenge experience is the people I have been able to work with, and the fact that we have been able to improve the sanitation and hopefully some of the lives of the kids at this school."

Rob Mauracher, Team Australia



"Last year [during the pilot Water Innovation Challenge project in Singapore] being a participant, presenting, and doing the practical tasks seemed so much more theoretical. But today, working here, we are looking at the kids' faces, smiles, and we are leaving them with something. So this is real; we are actually changing the lives of people! This is a competition, yes, and I am a coach on Team USA... but ultimately I am part of Team School 125."

Judith Torres, Team USA (pictured back row, centre)



- **Reliance India Limited UAP Programme**
- **Conference on Green Existing Buildings**

Reliance India Limited UAP Programme

IAPMO India's Master Trainer Asit Adalja has conducted a two day UAP training session in on 22nd and 23rd March 2015 in Mumbai. 21 engineers associated with various projects of RIL were trained. The Head of Dept. Mr. Prakash Lohia appreciated the efforts put in by IAPMO India & the Master Trainer to develop special presentations for RIL - on bathroom fixtures and especially the module on design of piping for water supply, drainage, vents and storm water – all based on UIPC-I.



Reliance India Limited Training Participants

Conference on Green Existing Buildings

Conference on Green Existing Buildings held on 21 & 22 May 2015 at Mumbai. The conference had over 150 participants comprising of speakers, Policy makers & supporters. Ms. Neeta Sharma, MD, IAPMO India participated as a speaker and gave a presentation on "Net zero water / water positive buildings", at the conference.





- **Customized training programme for Ess Ess (Asian Paints)**
- **MoU with Sterling and Wilson**

Customized Training Programme for EssEss (Asian Paints)

EssEss, the bath fittings and accessories manufacturer is now a part of Asian Paints. This merger will provide a world of ergonomically and innovatively designed bath concepts. EssEss has a wide range of products, offering best in class value across categories. In addition, it also provides an unmatched experience for the customer with their extended warranty period and expert service team for speedy after-sales service.

In order to enable a strong induction for all employees in Bath division with adequate theoretical and hands on experience, Asian Paints has embarked on a partnership with IAPMO India. IAPMO India conducted multiple 2 days plumbing and product awareness workshop to a diversified target group comprising of technical, sales and marketing personnel.

The first program in this series was conducted on 9 and 10th January 2015 at College of Engineering, Pune by IAPMO India's Master Trainer Mr. Asit Adalja (also Secretary, IPAMC), Ms. Neeta Sharma, Managing Director, IAPMO India and Ms. Swathi Saralaya, Manager-Technical & Training. The two day program included 1 day of classroom and 1 day of practical demonstration. Around 60 Asian Paints employees were trained in a span of 4 months in 3 training sessions.



EssEss (Asian Paints) participants, IAPMO India and IPA Pune Chapter Chairman during the first training session

MoU with Sterling and Wilson Limited

IPA, IAPMO India and Sterling and Wilson Limited renewed it's PEEP MoU for Plumbing Systems Design (PSD) and Plumbing Construction Management (PCM) in March 2015.

Seven engineers from various regional offices of Sterling & Wilson (reputed MEP contractors) - Gurgaon, Bangalore, Mumbai, Chennai etc. attended this 3 day Train the Trainer (TTT) sessions conducted by IAPMO India's Master Trainer Asit Adalja.

The PSD (Plumbing System Design), covers all topics relating to plumbing engineering in great detail .The participants asked a lot of questions, constantly bench marking their current installation practices with the recommendations of the 2014 UIPC-I. There was intense interaction not only with the trainer but also amongst themselves. The first 2 days training culminated with a 2 hour visit to the Plumbing lab at CoEP, Pune. They showed keen interest in all the various installations in the Lab, wanting the Master Trainer to give detailed clarifications about each installation – especially single stack and double stack drainage systems.



Participants for PSD Sterling and Wilson 02 May 28 2015



• Bhubaneswar

- MoU signing with KIIT

MoU with KIIT, Bhubaneswar

IAPMO-India's Plumbing and Mechanical Educational Programs to be taught at India's top university KIIT College Bhubaneswar- Odisha India. IAPMO India and IPA has started skilling and up-skilling initiatives with universities and Institutions pan India, with a aim to provide employment opportunities to unemployed youths and also to fresh engineering graduates as per Plumbing industry requirements.

The School of Civil and Mechanical Engineering at KIIT University, Bhubaneswar- Odisha, is one of India's most reputable institutions of technical higher learning, has signed a MoU with IAPMO-India and IPA to begin offering two courses "Plumbing Systems Design (PSD)" and along with IAPMO India's Mechanical HVAC System Design (MSD) programs.

KIIT University- Bhubaneswar, Odisha is one of the pioneer universities associated with IAPMO in this initiative. KIIT itself is a very impressive campus spread over 500 acres. It boasts of schools for 22 disciplines – Civil, Mechanical, Medical Science, Computer Applications, Biotechnology, Dentistry, Law, Nursing Sciences etc. Its founder Mr. Achyuta Samanta (recipient of the prestigious Gusi Award in 2014 for Poverty Alleviation thru Education and Humanitarianism) has been mentioned among the Top 15 Social Entrepreneurs of the World by the American Edge Foundation. Mr. Samanta also runs KISS - Kalinga Institute of Social Studies, the largest residential institute for tribal people in the world. It provides accommodation, study, career development, healthcare to 20,000 tribal students each year in its largest integrated residential campus, which is located in Bhubaneswar.

IAPMO India successfully conducted a TTT program at KIIT (Kalinga Institute of Industrial Technology) in Bhubaneswar, Odisha. Two programs were conducted simultaneously over 3 days from April 28 – 30, 2015:

- (1) PEEP-PSD program (Plumbing System Design) was conducted to a group of 6 Professors from School of Civil Engineering (SoCE). The trainer was Asit Adalja – Master Trainer, IAPMO India.
- (2) MEEP-MSD (Mechanical System Design) program to selected faculty from School of Mechanical Engineering (SoME). The trainer was Dr. Abdul Matheen, Director Mechanical, IAPMO India.

The PSD program is a comprehensive course suited to organizations who wish to teach Plumbing Engineering

to other engineers in their group. PSD comprises chapters like Grey Water Systems, Solar Hot Water, Storm Drainage, and Construction Management. The basic subjects of Water Supply, Drainage, Vents, Traps and Interceptors etc. are also covered in great detail. A video on the Plumbing Lab at Pune is also shown to reinforce the teaching. The KIIT faculty undertook this TTT program were all post graduates (M. Tech. and Ph.D.) Professors in SoCE. SoCE was very quick to follow up the TTT program and they initiated their first course for students four days after completing the TTT program. Prominent organizations involved in plumbing industry are recruiting these students with the help of our association with IPA after the examination.



IAPMO India team with Dr. Saranjit Singh, Dean, Department of Training & Placement and Dr. Prof. P.P. Mathur, Vice Chancellor, KIIT University



Sitting L-R: Prof. (Col.) S. Pany, Dr. Abdul Matheen, Prof. (Dr.) Prof. P.P. Mathur (Vice-Chancellor-KIIT University) Mr. Asit Adalja along with Prof. (Dr.) S. Singh (Dean-T&P, KIIT University).

Standing: L-R Prof. Tarak K. Sahoo, Prof. Deepak Singhal, Prof. Sumanta Choudhuri, Dr. Satya Prakash Kar, Prof. Santosh K Nayak, Prof. Swarup K Nayak, Prof. Isham Panigrahi, Prof. D.K. Bera, Prof. Rohan Kar, Prof. S.R. Pradhan, Prof. Nihar Ranjan Panda, Dr. Sanjib Moullick.



• **19th Indian Plumbing Conference**

19th Indian Plumbing Conference

19th Indian Plumbing Conference was held at Hyderabad on April 17th and 18th with a central theme “ Plumbing Engineering for Swachh Bharat”.



Ms. Neeta Sharma, Managing Director, IAPMO India made a presentation on “Plumbing Skill Development / Education / Training” during Technical Session - Multi-Disciplinary Approach on 18th April 2015 followed by Q & A Session.



IAPMO India team during the 19th Indian Plumbing Conference



• Bangalore

- World Plumbing Day Bangalore
- MEEP In House Training
- MEEP Graduation Day
- IAPMO India's participation in ACREX 2015
- MEEP-MSD-TTT Sessions held on December 18 & 19, 2015

World Plumbing Day Bangalore

World Plumbing Day is an international event on March 11th initiated by the World Plumbing Council (WPC) celebrating the important role plumbing plays in protecting the health and safety of society. A poster competition was conducted by IAPMO India during the day at Government Higher Primary School, Appareddy Palya Road, Indiranagar.



Plants dies without water" by Pallavi.K, V Std



IAPMO India, school mamangement & winners



"save water, save life"- Siddu, IV Std



Enthusiastic Kids

MEEP In House Training

IAPMO India started training “Mechanical Education to Employment Program” at IAPMO India’s in-house facility with an aim to dedicate established training & skill development programs and continuing education system will provide an institutional mechanism to facilitate greater and active participation of the industry, and to better link skill development with the country’s employment demands.

Below images during site visit and practical training sessions, Dr. Abdul Matheen and Mr. P V Chandar visiting faculty along with students of MEEP MSD, MEP & HVAC System Design



MEEP Graduation Day



IAPMO India's participation in ACREX 2015



'LESS ENERGY = MORE LIFE' with a 360 degree approach for a Greener Tomorrow. Being organized by the Indian Society of Heating, Refrigeration and Air Conditioning Engineers (ISHRAE) and produced by NuernbergMesse India Pvt. Ltd., ACREX India 2015 was conducted at India's only LEED Certified Green Exhibition Centre – Bangalore International Exhibition and Centre (BIEC) with over 40,000 sq. mtr. of fully covered and air conditioned space.

ACREX India is growing phenomenally every year and is becoming the launch platform for many International Organizations like, UNEP, IAPMO India, CIBSE, REHVA, EBTC, AMCHAM, US Commercial Services, VDMA Germany, KRAIA Korea and CAR China to network with the Indian Industry. The expo has garnered support from the Ministry of New and Renewable Energy, Government of India. ACREX India created new benchmarks by developing on these industry associations. The expo is also getting support from the prestigious Indian associations like IGBC, BEE and IAPMO India.

MEEP-MSD-TTT Sessions held on December 18 & 19, 2015 at IAPMO India Bangalore

During MEEP-MSD- TTT Sessions held on December 18 & 19, 2015 at IAPMO India Bangalore, Seen in the group Ms. Neeta Sharma, MD. IAPMO India, Mr. Sampath D Ex- Vice President Voltas International Dubai, Mr. J Ramamurthy, Dr. Srikanth N along with Team of professors from Knowledge Institute of technology (KIOT) Vice Princiपाल Dr.K.Visagavel, Dr.H.AbdulZubar Professor and Head Mechanical Engineering, Prof.T.Balakrishnan, Prof.J.Ramesh, Prof.S.Gowthaman, Prof.S.Surendar and Faculty from Vibha- Chennai.



Mr. Sampath D Ex- Vice President Voltas International Dubai, Mr. Pankaj Shah, National President ISHRAE, Dr. Abdul Matheen, Mr. J Ramamurthy, Dr. Srikanth N, BOSCH Bangalore along with Team of professors from Knowledge Institute of technology (KIOT) and Faculty from Vibha Training and Consultancy Services during the TTT session held at Bangalore.





- **MoU Signed between IAPMO India and SB Global for implementation of Federal Skills Training**
- **MoU signing with Vibha: MoU Signing with KIOT College**

MoU signed between IAPMO India and SB Global for Implementation of Federal Skills Training

MoU Signed between IAPMO India and S B Global for implementation of Federal Bank Skills Training, the following programs were selected by the federal bank team keeping in mind the stream of qualified Engineering graduates and Diploma Holders.



Vibha Training and Consulting Services Pvt. Ltd is now an associate partner of IAPMO India for propagation of Plumbing Education to Employment Program (PEEP) and Mechanical Education to Employment Program (MEEP) across southern states of India.



During an Interaction with team Vibha Training and Consulting Services Pvt. Ltd and IAPMO India management.



TTT for Federal Bank Skills Training in HVAC-R System Design was held at IAPMO India HQ at Bangalore:

Vibha Training and Consulting Services Pvt. Ltd.:

MoU Between IAPMO India and Vibha Training and Consulting Services Pvt. Ltd is a Private Limited Company which is responsibly managed, demonstrates financial practices, monitor appropriate instructional methods to ensure effective educational practices, facilitates qualified, professional instructors, and enrolls eligible students who can benefit from the programmes;

As an extension of our activities with Vibha Training and Consulting Services Pvt. Ltd, Tamil Nadu's top Engineering institution, Knowledge Institute of Technology (KIOT) has invited IAPMO India for propagation of Code based education to their students and KIOT is committed to establish the Regional Training Centre for Mechanical System Design (MSD) resulting into certification as Certified Mechanical Managers/ Mechanical HVAC System Design Engineers.

KIOT offers a supportive and caring campus environment for us to develop us socially, physically, intellectually and spiritually. Our college has a broad range of options for leadership growth, social activities and community involvement. KIOT is committed to establish student wellness through counseling. There cannot be a better place than KIOT for a young and aspiring engineering graduate

KIOT Vision: To be a world class institution to impart value and need based professional education to the aspiring youth and carving them into disciplined world class professionals who have the quest for excellence, achievement orientation and social responsibilities.

MoU Signing with Vibha: MoU signing with KIOT College



Knowledge Institute of Technology: Department of Mechanical Engineering, signing of MoU with International Association of Plumbing and Mechanical Officials (IAPMO) India, Bengaluru, for mechanical managers programme, Neeta Sharma, MD, IAPMO India, chief guest, P. S. S. Srinivasan, Principal, presides, 10 a.m.

College signs MoU

Special Correspondent

SALEM: International Association of Plumbing and Mechanical Officials-India—an Indian Corporation to develop a uniform plumbing code within India—signed a memorandum of understanding (MoU) with Knowledge Institute of Technology, Salem, along with Vibha Training and Consulting Services Private Limited on Thursday.

The MoU will facilitate setting up of a regional training centre at the college. Through this MoU, selected students will be given training in plumbing, which will enable them get better employment in MNCs.

The MoU was signed by Neeta Sharma, Managing Director of the association, P. S. S. Srinivasan, Principal and Secretary of the college, and Nanjundeswaren, Director, Vibha Training and Consulting Services.

- To nurture talent, entrepreneurship, all-round personality and value system among the students and to foster global competitiveness among students.
- To undertake collaborative projects which offer opportunities for long-term interaction with academia and industry.
- To pursue global standards of excellence in all our endeavors namely teaching, research, consultancy, continuing education and support functions.
- World Class Education at an Affordable Cost.
- Enabling All Students to get Degree on Time.
- Empowering the Aspiring Students to become 100 % Employable.
- Ethics and Value based education, 360° Personality Development.

KIOT Core Values

- Development of the best-in-class human resources to serve the nation.
- Retain a willingness to experiment with new paradigms.
- Think big, analyze rigorously and work hard in the pursuit of excellence.
- Appreciation of intellectual excellence and creativity.
- Academic integrity and accountability.
- Respect and tolerance for the views of every individual.
- Attention to issues of national relevance as well as of global concern.



ASAP Programme

Government of Kerala and IAPMO India

For implementation of Additional Skill Acquisition Programme – ASAP

Project Summary

Demographic dividend, Development indicators and Market potential has placed India in a formidable position in the 21st century's financial landscape. By the year 2020, the country is poised to become a major human resource hub of the World even ahead of many developed nations of the present. A huge responsibility rests with the State Governments towards making the country future ready and a great deal of this depends upon concerted efforts in raising the quality and standards of the human resources. The Government of India, realizing this has created a road map for Human Resources Development at all levels including Education, Research, Industry and Trade.

National Skill Development Mission has estimated that there is an increased demand for skilled manpower to sustain the industrial growth and thereby the economic growth of the nation. To create such a trained manpower, it is essential to give training that will provide assistance for skill formation to the general populace that will enhance their capacity to undertake gainful self –employment as well as access to better salaried employment in industries through identified skill sectors.

The plumbing Industry faces a huge gap in the supply of skilled labour. This course will provide the learner with practical skills and knowledge to carry out plumbing applications in both the commercial and domestic sectors of the industry. RFP was invited by Kerala government on behalf of prospective skill training service providers seeking to provide—Skill Course Training in Plumbing sector.

Mission

Kerala, traditionally known for its high quality manpower spread all over the World and with a high density of science and technology personnel, has always set a model for the nation in developmental issues. The realization of the fact that its unemployed population kept swelling despite having a rich talent pool, made it think and devise ways to counter the trend.

The Kerala State, by realizing this responsibility, has embarked upon an ambitious project named State Skill Development Project to equip its young population with skills in cutting edge sectors in order to effectively alleviate the unemployment problem in the state. The project combines both preventive (Additional Skill Acquisition Programme - ASAP) and curative approaches (Additional Skill Enhancement Programme). On the preventive side, the General and Higher Education Departments together will implement the Additional Skill Acquisition Programme (ASAP) to amplify working hands in different sectors of the economy, by providing additional skill sets to students along with their regular courses.

Additional Skills Acquisition Programme (ASAP) has been developed to impart sector specific skills to create a labour market ready work force. Additional Skill Acquisition programme has recognized that trained manpower is required in the sectors such as Agriculture, Construction and Infrastructure Development, Life Sciences, Plumbing, Event Management.

Objectives

- To enhance the employability of the students graduating from regular academic courses by introducing additional skill acquisition programmes along with the regular studies.
- To ensure students enrolled for ASAP programmes attain a reasonable level of competence in English Communication as well as in basic IT domain.
- To provide good quality industry endorsed training in selected industry sectors to the interested students predominantly from the families belonging to socially and economically weaker sections. The broad aim of State Skill Development Project is to fulfil the growing skilled manpower requirements of the state and to bridge the gap between supply and demands. Within this broad framework, the Additional Skill Acquisition Programme aims to provide quality industry oriented skill training to more than 3.1 lakh deserving students through a network of selected schools and colleges across the state of Kerala over a period of five years.

Government of Kerala and IAPMO India

- Additional Skill Acquisition Programme has been conceived as an idea making the State of Kerala as a hub for Skilled Manpower through imparting skill training through industry linkage to students of Schools and Colleges.

Road Map

- IAPMO India signed an agreement on 3rd December 2013 with Government of Kerala to develop competent manpower in plumbing sector, to offer skill oriented courses in plumbing Sector which is valid till 31st July 2016. 14 Skill Development Centers spread across 11 districts of Kerala have been recognized by Government of Kerala where basic infrastructure support required for the training is provided. Programme Manager (PM) of ASAP, appointed by Government for the purpose of ASAP, are managing and administering the training programmes in the selected institutions along with the faculty coordinators designated in the institutions.



Skill Orientation at Skill Development Centres

- It was conducted on 8th, 9th, 15th and 16th November 2014 at 9 centers. IAPMO India met 300- 360 students and their parents who would understand the importance of the course and decide their choice. The leaflet of ASAP -PAP was distributed to parents and students. The concept and activity videos of PAP were played. Both students and parents enquires were handled. The Skill Orientation sessions facilitated sufficient publicity and different publicity tools such as press releases, media briefings, display of banners, posters etc were used for it.
- ASAP conducted individual Aptitude Assessment Test to the students based on the options registered during these 4 days. The score obtained in the aptitude test combined with the weightage for the option by the student was considered for the mapping of a student to a particular course.

Role of IAPMO India

- Design the programme in such a way that students enrolled with ASAP can take the programme as an add-on programme and equip them to take up job in the concerned sector.
- Design a curriculum with 50 hours of theory, 150 hours of practical and 24 hours internship for "Plumbing Apprentice Programme" which is compliant to National Occupational Standards of "Plumbing General Assistant" Job role (QP No. PSC/ Q 0102 NSQF Level :2) of Indian Plumbing Skill Council (IPSC).
- The Plumbing Apprentice Programme (PAP) developed jointly by IAPMO and IPA (Indian Plumbing Association) is a foundation programme in plumbing to provide individuals with the basic plumbing skills. Through this course of study, an individual will learn practical aspects of the installation, repair and maintenance of a variety of piping systems, plumbing fixtures and other equipment generally associated with water distribution and waste water disposal; and be introduced to some of the basic principles and code requirements of typical plumbing systems.

Government of Kerala and IAPMO India

- Overview of Course - The Plumbing Apprentice Programme (PAP) is a foundation programme in plumbing to provide individuals with the basic plumbing skills. Through this course of study, an individual will learn practical aspects of the installation, repair and maintenance of a variety of piping systems, plumbing fixtures and other equipment generally associated with water distribution and waste water disposal; and be introduced to some of the basic principles and code requirements of typical plumbing systems.
- IAPMO India conducted Train the Trainer Session for PAP, on 22nd and 23rd March, 2014 at SRATI, Coimbatore which was conducted by IAPMO India Master Trainer. Orientation sessions were conducted for all the new trainers.
- All programme materials required by students during the training period has been updated. The arrangement for lab facilities at all identified locations have also been set up and the training sessions are being conducted regularly with more scope for team work, individual practice on skill and interaction of the students.
- Course material containing both reading material and hands out in the form of Participant handbook, Quality Framework, Syllabus, Trainers Guide, Assessment guide etc. in English have been distributed to all students as per ASAP format.
- The Government of Kerala and IAPMO India have been frequently visiting these training centers to conduct inspection to ensure teaching standards and quality maintenance.
- Periodic theory and practical assessments were conducted at all SDCs at the completion of 25%,50%, 75% and 100 % of skill classes.
- The final theory and practical assessment for this batch was scheduled on 27th and 28th June 2015 in the 13 SDCs. The general assessment was matched with the assessment criteria of IPSSC. Total marks was out of 300 in the pattern testing both the theory and practical knowledge of the students, format given in the NSDC website
- The certificates shall be jointly issued by Government of Kerala and IAPMO to students after completion of training
- Placement drive was conducted at Sobha City, Thrissur by Sobha Projects & Trade Pvt. Ltd., 35 students out of 57 students who attended the placement drive were selected as plumbers and fitters.

Glimpses of Training



Orientation sessions by IAPMO India at Kollam Center



Government of Kerala and IAPMO India

Training of Trainers



Kollam - Mangad SDC



Students at Pathanamthitta SDC



Trivandrum- Thycud



Kattapana SDC



Government of Kerala and IAPMO India

Training Challenges

Quality of training will be driven (as well as be determined) by the following dimensions at the level of each/individual institute/centre: Strong Governance and Administration, appropriate faculty, Current curriculum and Relevant infrastructure. IAPMO India has selected and developed training that is closely aligned with improvement of job performance which is crucial to realizing a return on training investment, and a cost-effective training delivery medium that works well for the target audience. Doing both requires some up-front analysis:

- Articulate learning outcomes we want students to realize
- Understand the context in which the student will perform
- Recommend a delivery method that best accomplishes the desired learning outcomes

During the last 2 years of IAPMO India acting as TSP, below are few of the training challenges we faced and also few suggestions which can be incorporated in the action plan of the training programme to be designed and executed during the succeeding phases.

• Retention of students

It is observed that students lose interest in the classes and switch skills after a certain period of time due to various reasons. If this is intimated to the TSP's in advance, appropriate counseling can be given to students which will help in retaining the admitted students for the particular skill training.

• Retention of trainer

IAPMO India has hired Master trainers on contract basis after training them. If trainers don't understand how to use training material, or if they aren't familiar with them, the learning won't stick. Care is taken that the practical knowledge amongst the trainers is enhanced while training them. PAP classes are conducted mainly during the weekend and it is very difficult to retain these trainers with a minimal salary. It is suggested that ASAP facilitates connecting to ITI faculties of that District and a Pool of Trainers is erected by IAPMO India to ease out this issue.

• Infrastructure

Maximum investment during the training is upon the purchase of tools for practical purposes. The tools should be kept on display and not kept inside shelves. Security should be provided for the lab space provided in the SDC's

- A defined process for evaluation/ assessment after completion of training.

• Internships and placement

It becomes an issue while hiring students below 18 years of age and girl students for internship/ placements for the below reasons apart from safety which is one of the major concern.

- An 'Apprentice', can be below 18 years of age where the organization is bound to give minimum stipend to the Apprentice and there is huge documentation to be submitted by then under the relevant Act. For this reason, most companies do not prefer to hire as an Apprentice!
- For hiring an 'Intern', the organization is not liable for any stipend and no documentation is to be submitted to the Government under any Act, but Intern has to be over 18 years of age.- Organization need not hire an intern. Instead are allowing interns for learning purpose only. We can issue a letter in this regard. Even if they do not hire, below 18 years of age remains an issue with them. As allowing them on premises becomes an issue.
- The list of students with age should be given well in advance to arrest last minute issues and concerns. It may so happen that a site may have completed Plumbing work, by the time Internship schedule starts after completion of classes. If the data is made available well in advance and if ASAP agrees, the internship can be scheduled/ planned accordingly to match the progress of the site.

Government of Kerala and IAPMO India "Summer Skill Skool"

For implementation of Additional Skill Acquisition Programme – ASAP



Introduction

With the changes in business environment and economy, the competition today is much greater than ever before. The younger generation needs to be well equipped to face the challenges of a highly competitive world. Skill set of yesteryears have become obsolete in many sectors. Besides, the gap between education and employability has increased due to various factors including that of absence of regular industry interactions. This has led to an unprecedented situation in the State. The increasing number of graduates coming out of schools and colleges are not being able to make a positive impact on the job market. It is in this context, the Government of Kerala has designed a strategy to tackle the curse of educated unemployment through the State Skill Development Project (SSDP). Within short of span of its operation, ASAP which is part of the SSDP, has been successful in ensuring industry participation in the implementation of skill programmes and has received wide acceptance among the student fraternity.

Since the clientele groups are students studying in first year Under Graduate Programmes and Higher Secondary Courses, many were left out of the programme.

This includes a considerable chunk of Students studying final year Degree and Second Year Plus two classes who are looking for livelihood options

immediately after their courses and many of them take up odd jobs as a livelihood option. It is estimated that approximately 1, 65,000 and 4, 00,000 students are completing their under graduate and Higher Secondary education respectively every year in Kerala. Higher Secondary Students complete their studies by the ASAP Annual Report 2013 - 14 85 end of March whereas the completion dates for Under graduate students will vary from University to University. Across the developed world, Students consider vacation period especially summer vacation as a golden opportunity to learn vocational skills and to understand the nuances in working in real world scenario. Governments and Industries in these countries also encourage youngsters to take up vocational programme and even incentivize such programmes. Unfortunately, our country hasn't experienced such a vocational culture yet. ASAP has taken efforts to popularize the concept of Vocational training during summer in a small way in the past and this experience has prompted ASAP to design a comprehensive Summer Skill Training programme named 'Summer Skill Skool'.

Objectives

Summer Skill Skool aims to Train and Place 15000 students graduating from Under Graduate Colleges and Higher Secondary Classes in selected Job Roles. This is mainly intended for students completing their studies from the Government and Aided Colleges and Higher Secondary Schools in the State and looking for a Job through various mode such as Design, Operate, Assess and Place (DOAP), Demand, Operate and Train (DOT) and Design, Align and Train (DAT) as part of ASAP with the objective of improving employability of students.

Demand, Operate and Train (DOT) Scheme

This scheme intends to encourage Schools and Colleges to take up Skill Development programme for the deserving students and thereby attempts to introduce Skill Development Training during summer. The Scheme also aims to integrate Vocational training with mainstream education. In this Scheme, Schools and Colleges will be encouraged to take up Skill Development Programme from ASAP Skill bouquet and implement the same during

Government of Kerala and IAPMO India "Summer Skill Skool"

summer vacation in their Institutions. Institutions were also entrusted the task of enrolling students based on the ASAP guidelines. ASAP engages with the Training Service Providers of the Institutions for the chosen programmes and also provides a consolidated amount as Administrative and Management Expenses. Quality Assurers of ASAP will ensure quality of the training delivery whereas ASAP Programme Managers will take care the monitoring of Scheme. ASAP initiates the Placement drive for successful candidates in this model.

Role of IAPMO India and Glimpses of Training

- IAPMO India signed an agreement on 23rd June 2015 with Government of Kerala to develop competent manpower in plumbing sector, to offer skill oriented courses in plumbing Sector which is valid till 31st December 2015.
- Under DOT Scheme of Summer Skill Skool Plumbing Apprentice Programme, 4 institutions students enrolled whose details are as below.

Sl. No.	Institution	District	No. of Students	No. of female Students
1	Government Higher Secondary School, Eranhimangad	Malappuram	30	Nil
2	Government Higher Secondary School, Thazhathuvadakara	Kottayam	28	17
3	Government Higher Secondary School, Erattupetta	Kottayam	23	10
4	Government Children's Home	Kottayam	30	1

- Design the programme in such a way that students enrolled with ASAP can take the programme as an add-on programme and equip them to take up job in the concerned sector.
- Design a curriculum with 50 hours of theory, 76 hours of practical and 150 hours internship for "Plumbing Apprentice Programme" which is compliant to National Occupational Standards of "Plumbing General Assistant" Job role (QP No. PSC/ Q 0102 NSQF Level :2) of Indian Plumbing Skill Council (IPSC).

- The Plumbing Apprentice Programme (PAP) developed jointly by IAPMO and IPA (Indian Plumbing Association) is a foundation programme in plumbing to provide individuals with the basic plumbing skills. Through this course of study, an individual will learn practical aspects of the installation, repair and maintenance of a variety of piping systems, plumbing fixtures and other equipment generally associated with water distribution and waste water disposal; and be introduced to some of the basic principles and code requirements of typical plumbing systems.
- This course equips the students with knowledge in topics including Introduction to Plumbing, Building Sewer (External), Drainage, Waste and Vent (Internal), Occupational Health & Safety, Water Supply (Internal), Engineering Drawing, plumbing Fixtures, Uniform Plumbing Code-India and Introduction to Plumbing Systems.
- Training of Trainers (ToT) sessions was conducted for all the new trainers on 31st March and 1st April, 2015 at SB Global Training center, Ernakulam. These were deployed as locations identified by ASAP for imparting the training.

Status of the DOT – PAP Classes

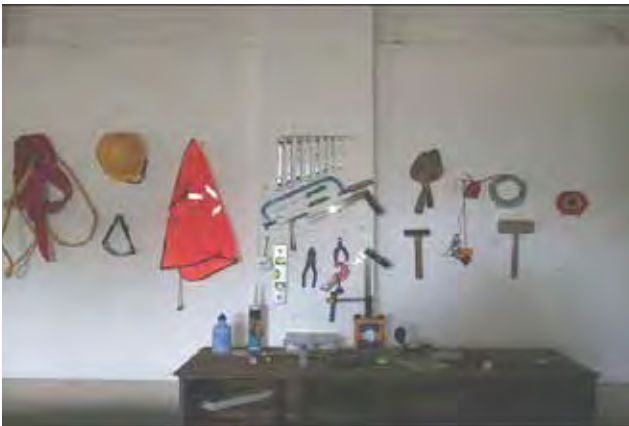
Sl. No.	Skill Development Center	Student Strength	Completed Hours	Start Date	End Date
1	Government Higher Secondary School, Erattupetta	28	126	27-04-2015	30-06-2015
2	Government Children's Home	35	126	27-04-2015	30-06-2015
3	Government Higher Secondary School, Eranhimangad	30	126	27-04-2015	30-06-2015
4	Government Higher Secondary School, Thazhathuvadakara	30	126	08-05-2015	30-06-2015

- The arrangement for course specific lab facilities at the training centers has been set up.
- Course material containing both reading material and hands out in the form of learners note, guidelines, quick reference guide etc. in English have been distributed to all students.

Government of Kerala and IAPMO India "Summer Skill Skool"

IAPMO India had been frequently visiting these training centers to conduct inspection to ensure teaching standards and quality maintenance.

Tools display at training center



Demonstration classes



IAPMO India at Kottayam Children's Home, with Superintendent Ms. Mercy of school



IAPMO India with students, Principal of school and Programme Manager at Government Higher Secondary School, Thazhathuvadakara



IAPMO India with students, Principal of school, PAP Trainer Mr. Rajendra and Programme Manager at Government Children's Home - Thiruvnchoor, Kottayam

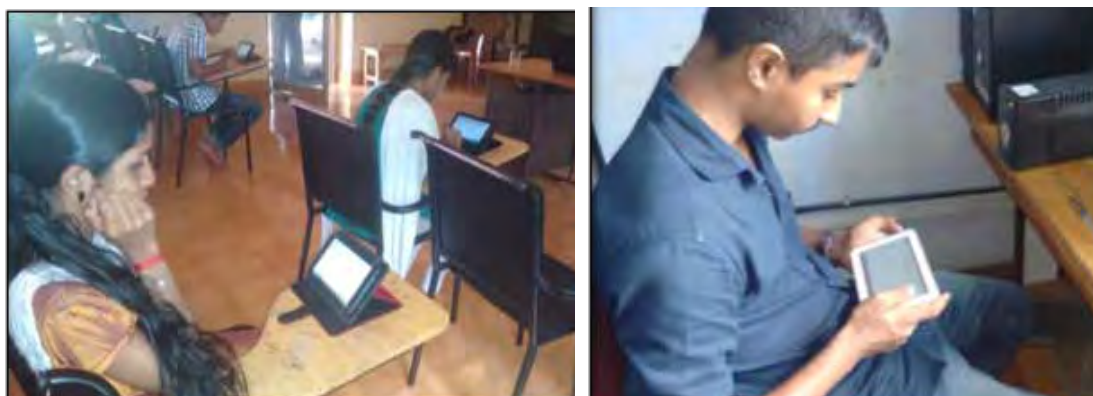


Government of Kerala and IAPMO India "Summer Skill Skool"

- Periodic assessments of the batches were conducted at regular intervals.
- Internship was provided for students for 150 hours.



Final assessment of the PAP students was conducted by Indian Plumbing Sector Skill Council (IPSC) on 15th, 16th, 17th and 19th of July 2015.





- **IPA Jaipur Chapter Seminar in Association with IAPMO India**
- **Municipalika Sustainable Smart Cities**

IPA Jaipur Chapter Seminar in Association with IAPMO India

IPA Jaipur Chapter in association with IAPMO India organised a seminar on 'Employment in Plumbing Sector for Engineers' on 11th May-2015 at Jaipur. Ms. Neeta Sharma, Managing Director, IAPMO India, gave a presentation on the topic, which was well received and appreciated by the participants.



Municipalika – Sustainable Smart Cities

9 – 11 December

Municipalika 2015 was organized in Jaipur, Rajasthan, co-located with CAPEX, trade show focusing on Construction, Architecture, Planning and Engineering. The twin-event was the only one of its kind, focusing on Sustainable Built Environment and Good Urban Governance. The three day conference and exhibition was attended by mayors, municipal commissioners, senior urban development officials from the Central and State Governments, Urban Local Bodies and Housing agencies from all over India, built environment professionals, architects, planners, and engineers to answer the question: "How do we plan, design, build and maintain sustainable built environment and smart cities?"

Ms. Neeta Sharma, MD, IAPMO India gave a presentation in Sanitation for all by 2019 segment, mentioning importance of Total Sanitation, gaps & issues with effective solutions.



Infrastructure for Smart Cities



Neeta Sharma
Managing Director, IAPMO India

A Smart City will include Planning and Management of People and Infrastructure including City Planning and Operations, Government and Agency Administration, Public Safety, Social Programs, Health care, Education, Transportation, Buildings all of which includes Energy and Water. Fundamental services—such as roadways, mass transit and utilities—make a city desirable and livable, but the key to keeping them viable is readiness for constant change.

Smarter cities of all sizes are capitalizing on new technologies and insights to transform their systems, operations and service delivery. There is a huge competition to attract new residents, businesses and visitors to provide a high quality of life and vibrant economic climate. This leads to challenges such as budgets, scarce competent resources, challenges, new innovative technologies which turn them into opportunities.

However, if you look from a common man's perspective, Smart City is one which gives equal opportunities to all residents and a safe, secure and clean sustainable environment.

Buildings, be they hotels, hospitals, IT parks, offices or residential spaces, are usually termed as energy guzzlers. From lighting up the structure to operating elevators, every single operational activity in a building requires energy. There is a buzz to curtail emissions and in turn reduce their carbon footprint. World is slowly transitioning towards sustainable buildings. The first step towards making a building sustainable is making it energy-efficient, including conservation of Water, which is a scarce resource. Various standards and certifications have been developed to identify sustainable constructions. They not only help you create and recognize environment-friendly buildings but also act as reference points for buildings aspiring to become sustainable.

Looking from another perspective, there are 4 M's which play a crucial role in overall success of any Project- Money, Manpower, Machinery and Management.

Time is Money. The success of any project lies in its timely completion. Thus availability of Codes and Standards to which a project complies has to be uniform, understood, designed and adhered to by all those involved in design, construction and commissioning of the Building.

Competent Manpower is a critical component of construction projects as in any manufacturing industry. Time has proven that unskilled manpower has resulted not only in poor construction quality but has resulted in structural damages leading to huge losses due to maintenance of Post Construction care by means of Retrofitting, especially the leakages that pop up in best of buildings due to poor Plumbing.

Machinery, in the form of materials of various forms used in the buildings, such as, Cement, Concrete, Firefighting/ solar installations, pipes, fixtures, heaters, air-conditioning – all of the products that make up the content of the building – must be tested and listed to the appropriate standard to ensure quality and performance. Third party certified and efficiency rated products play a crucial role towards timely completion of any project and by having confidence of the quality of the material prior to installation.

Management of the project, both by following Best Management Practices and seeking appropriate Management System Certification has been taken up as a big tool by the industry. Sometimes these are made mandatory by various regulations, such as OHSMS- Occupational Health and Safety Management System, QMS- Quality management system, and EMS- Environmental Management System. The most recent introduced into the system is Third Party Inspections of Infrastructure Projects as per ISO/IEC 17020- Conformity Assessment- Requirements for the operation of various types of bodies performing inspection. This gives confidence to the client and consumer to be sure that the

construction, supervision and commissioning of the project has been carried out as per the requirements specified by the client.

Some of popular National and International green building certifications can be termed as GRIHA, LEED, IGBC Rating Systems. Energy Conservation Building Code, by Bureau of Energy Efficiency (BEE) and Water Efficient Products- India by IAPMO I and IPA

Infrastructure for Smart Cities

are two such codes whose mandatory enforcement will result in substantial energy savings annually and will help India achieve its energy-efficiency goals.

Water Efficient Products-India (WEP-I) is a rating System for Sustainable Plumbing in India jointly developed by IAPMO India and IPA. It has a set of recommendations to those involved in the design, engineering, manufacturing, selection, installation and maintenance of water efficient plumbing products for domestic and commercial applications in India. The use of WEP-I is to encourage use of water efficient products, to incorporate and implement the latest technology and systems and provide uniformity in the performance of products.

Certification of High Efficient, Low Flow Water Efficient Plumbing Fixtures and appliances such as faucets, showers, urinals, water closets, ablution sprays, cloth washers, dish washers etc, brings in saving water by minimum of 25%.

Installing the right things is a must and a challenge too! To maintain what is claimed is not an easy job! The whole concept of "Green" lies in its sustainability. The concept of Third Party Certification lies in assuring all stakeholders/ users of its continued use as per the claim made by the manufacturer. The stringent certification process mandates manufacturer to produce Quality product. If any product fails in its performance, after installation, manufacturer is bound to take necessary corrections as per their policy. As regular maintenance for the systems is required over their lifetime to sustain the efficiency projected, Third Party Certification comes as a tool to measure and monitor it.

Due to high rise buildings, mixed use of buildings and building clusters more complex, there has been a tremendous increase in the importance of Plumbing. There has been a demand of new Utilities required such as High Pressure requirement for some fixtures, Dual piping, Solar, Central hot water systems, Central cool drinking water system, Landscaping on terraces and parking, Hydro-pneumatic Systems, Multiple metering, Building Management Systems etc. as there has also been an increase in General awareness, Health Aspects of Plumbing, Mandatory Rainwater Harvesting, Water and energy conservation, Eco-friendly designs etc.

Thus, apart from focus that is required on Good Plumbing Designs and Practices its implementation

by Trained/ Skilled Designers, Supervisors and Plumbers cannot be undermined.

IAPMO/IPA have been successfully partnered with Government of Kerala, Higher Education Department, for implementation of programme – Additional Skill Acquisition Programme (ASAP) with an objective of improving the employability of students in schools and colleges by imparting plumbing skill training. IAPMO India is imparting Plumbing Apprentice Programme (PAP) to the students all over Kerala for 150 hrs- 50 hrs Theory and 100 hrs Practicals. We have entered into MoU with the government to develop competent manpower in PLUMBING sector, facilitating skill oriented courses, jointly developed by IAPMO-IPA, (Indian Plumbing Association) for 12 class students. The programme has been running since last year and students spread across all districts of Kerala have benefited from this training leading to successful employment of interested students.



I appeal to all the stakeholders of construction industry and users in particular to collaborate, support and acknowledging the NEED of a sustainable environment by going in for Third Party Certified Products, Third Party Inspections of the Projects and Skilled and certified personnel, thereby facilitating India to be the global leaders and make each city a Smart and Sustainable for the generations to come!





• **ROCA Ranipet Plant**

ROCA Bathroom Products Private Limited

During Opening meeting at ROCA - Ranipet Plant





- **Federal Bank Skills Project**

Federal Bank Skills Project



Federal Bank started a pilot skill development academy in Kochi which will impart highly demanding courses like HVAC-R and plumbing system design & technology courses to meritorious students. The entire fees and infrastructure for the program will be borne by the Bank. Selection towards the skill academy will be based on merit and financial capability of the student. The initiative will facilitate eligible candidates to successfully complete the courses with international certification and make them employable for opportunities both in India and abroad.

Through this initiative, the Bank will become part of the skill development mission initiated by Government of India to up-skill millions of students and make India a hub for skilled workforce. Bank has tied up with SB Global Education Resources as its implementing partner for the first such project is launched and the training for the first batch is in progress.

The course will be trained and certified by IAPMO India (International Association for Plumbing and Mechanical Officials-India Faculty), which is recognized across the world. The course duration would be 3 months, bank press release said.

PEEP courses are now Indian Plumbing-Sector Skill Council (IPSSC) certified

IAPMO India has Code based Education Programmes which lead to employability. The Programmes are based on UIPC, Uniform Illustrated Plumbing Code, prepared by Technical Committee of IPA, Indian Plumbing Association. Through PEEP, Plumbing Education to Employment Programme, we offer programmes which are also IPSC approved to various levels,

PCM, Plumbing Construction Management, for ITI's and graduates – mapped and approved to Level 6 of IPSC



PTP, Plumbing Technology Programme, for 12 class pass outs- mapped and approved to Level 3 of IPSC



PAP, Plumbing Apprentice Programme, for school dropouts- mapped and approved to Level 2 of IPSC.



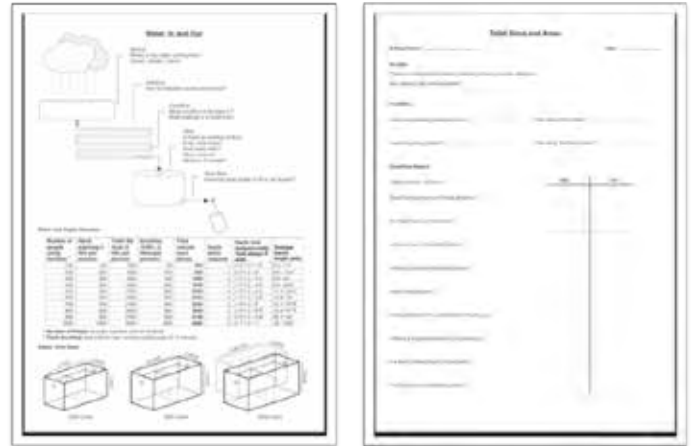


**The Nepal Village Health Improvement Program –
Design Workshop for the Jalapadevi Higher Secondary School,
Nepal February 2015**

The Nepal Village Health Improvement Program - Design Workshop for the Jalapadevi Higher Secondary School, Nepal February 2015

IAPMO India's Swathi Saralaya participated in 3rd Nepal Design Workshop conducted by Healthhabitat. The 10 day workshop included multiple design and health activities summarised as follows.

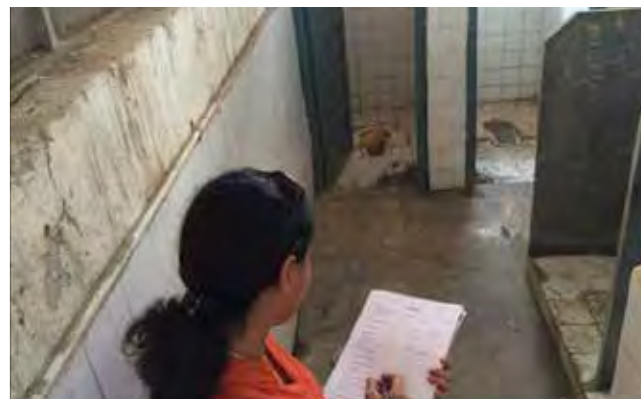
- Removing human waste safely - Design of new toilet and hand washing facilities and upgrading the existing facilities at the Jalapadevi School.
- Design of teeth brushing facilities at the School.
- Ensuring a water supply and designing waste water treatment and disposal systems
- Assembling a kit of important principles learnt from the design of the real project to assist the Nepali team work on future school projects. (This kit was used by the IAPMO team planning future similar works in India).
- Commence a series of dental health initiatives in the school – screenings, tooth brushing instruction, teacher training and treatment. The detailed design of a toothbrush store for the school tooth brushing program.
- Write a design course for university study to integrate the activities of the Nepal Workshop into a formal structure.



The Feasibility kit prepared during In Nepal will allow a brief assessment of what exists at the school and the water, wastewater and site requirements of establishing a sanitation and dental health program



Jalapadevi School Site



Swathi using the Feasibility checklist inside a school toilet area in Nashik



On the last day of the Workshop, every team member was presented with a Certificate of Appreciation from the Health Habitat Nepal project Manager and Australian Director



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'Net Zero Water' is not so far into the future...'

Ms Neeta Sharma, Managing Director, IAPMO

1. What's Net Zero Water as a concept. How does it fit into the larger Net Zero Energy objective

Net zero water in any building is that which "Adds value" to ecological system by generating more than their own need. It can be termed as systemic capability to generate, sustain and evolve the life of a particular place leading to transformation as to how society conceives/ designs and builds environment. Building professionals seeking to translate into net-positive practice could play a leading role in that transformation.

If net zero water could be fully achieved we could have a building that would require neither a water nor discharge connections. All the requirements of infrastructure for a municipal supply or waste water discharge would disappear. Sustainability satisfied under those conditions would allow construction almost anywhere.

Buildings with Net Zero Energy performance could be achieved using various approaches such as renewable energy technologies, purchasing green energy credits, etc. Like water there are Green certified Mechanical technologies available too. Further, the mention of 'net-positive energy' buildings brings forth various new theoretical and practical issues apart from introducing several new design considerations and possibilities.

Such as, localizing the source and effluent treatment would have trade offs. Energy required for pumping over long distances would be eliminated, however the energy required for on-site treatment would escalate. Those costs would need to be offset by other mechanisms. What any savings would accrue would be a guesstimate until more data points are known.

2. 'Net-Zero Water is technologically feasible for Existing Buildings'- please share your thoughts

I feel Net- Zero Water technology is surely feasible for Existing Buildings after thoroughly examining the initial design and making necessary changes by experts and under supervision of certified personnel. This should then be certified by Third Party Inspection Agency- from stages of Design to Commissioning followed by regular surveillance. This will not only prove what is being claimed after retro-fitting but with a passage of time improve the technology too!

By tapping on Alternate Water Resources, such as, Rainwater, Reclaimed water (Treated waste water/processed water and Treated sewage) and Gray water recycling, Net Zero building can be achieved which can further graduate to Net Positive Building after evaluating and fulfilling its quantity, quality, spatial and financial prerequisites.

Surely the time to equip a building for Net Zero Water or Energy is during the construction phase. To retro fit a building may cost 2 to 3 times what it would cost during initial construction

3. Is there a building that you think in India qualifies for Net Zero Water. And for net zero energy

Not to my knowledge. This can only be confirmed after carrying out necessary Inspections.

4. Please share more on Water Efficient Products – India (WEP-I) : Rating system for sustainable plumbing in India

Water Efficient Products-India (WEP-I) is a rating System for Sustainable Plumbing in India jointly



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developed by IAPMO India and IPA. It has a set of recommendations to those involved in the design, engineering, manufacturing, selection, installation and maintenance of water efficient plumbing products for domestic and commercial applications in India. The use of WEP-I is to encourage use of water efficient products, to incorporate and implement the latest technology and systems and provide uniformity in the performance of products.

Certification of High Efficient, Low Flow Water Efficient Plumbing Fixtures and appliances such as faucets, showers, urinals, water closets, ablution sprays, cloth washers, dish washers etc, brings in saving water by minimum of 25%.

5. **Installing the right things. What about ensuring they stay as efficient in the operations without much effort from the occupants**

Exactly! Installing the right things is a must and a challenge too! To maintain what is claimed is not an easy job! The whole concept of "Green" lies in its sustainability. The concept of Third Party Certification lies in assuring all stakeholders/users of its continued use as per the claim made by the manufacturer. The stringent certification process mandates manufacturer to produce Quality product. If any product fails in its performance, after installation, manufacturer is bound to take necessary corrections as per their policy. As regular maintenance for the systems is required over their lifetime to sustain the efficiency projected, Third Party Certification comes as a tool to measure and monitor it.

Importance of Plumbing has increased tremendously as Buildings/Building Clusters became more complex. There has been a demand of new Utilities required such as High Pressure requirement for some fixtures, Dual piping, Solar, Central hot water systems, Central cool drinking water system, Landscaping on terraces and parking, Hydro-pneumatic Systems, Multiple metering, Building Management Systems etc. There has also been an increase in General awareness, Health Aspects of Plumbing, Mandatory Rainwater Harvesting, Water and energy conservation, Eco-friendly designs etc.

Thus, apart from focus that is required on Good Plumbing Designs and Practices its implementation by Trained/ Skilled Designers, Supervisors and Plumbers cannot be undermined.

6. **Your message to readers of IGBC Envoy**

My appeal to all the stakeholders of construction industry and users in particular is to collaborate and support IGBC's vision by creating and acknowledging the NEED of a sustainable environment by going in for Third Party Certified Products, Third Party Inspections of the Projects and Skilled and certified personnel, thereby facilitating India to be the global leaders much before the laid target of 2025!



Student Column

Bindu Kumar

I am a Mechanical Engineering graduate working in the field of air-conditioning and I was looking for a better career in this field. I had inadequate knowledge of codes, Standards and International best practices, which was a hindrance for my bright future. Therefore to enhance my knowledge of codes and standards in Mechanical HVAC-R domain, I joined MEEP in-house program conducted by IAPMO India at Bangalore under the training faculty Dr. Matheen.

MEEP-MSD-MHVAC-R System Design program is a very aptly crafted out of international best practices and Uniform Mechanical Code India, my take is that it is one of the best programs available in India. Through this training, I gained immense knowledge and exposure to International Best practices, which are purely based on UMC-I covering Mechanical HVAC-R systems & HVAC system design. I stood first in my assessment- all credit goes to IAPMO India Training Faculty for their selfless dedication and knowledge sharing.

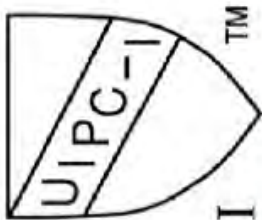
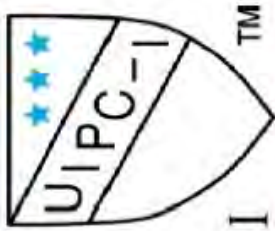

Immediately after completing my training formalities, I received a call from IAPMO India office informing me about the upcoming interviews for NBTC at Bangalore. I am directed by IAPMO India team office to attend the interview in a Kuwait based Company NBTC. I got selected as Project Engineer HVAC/MEP and my pay package is beyond imagination at tax free salary of approximately Rs.126,000 per month plus all facilities like transport, boarding and lodging. I am travelling to Kuwait tomorrow (December 13, 2015). I am thankful to IAPMO India management Ms. Neeta Sharma and Dr. Abdul Matheen and the entire team for giving me this great opportunity to upgrade my HVAC-R Knowledge and achieved success.

MEEP program is unique in nature, no institute in India teaches code based education specially UMC-I based education. This program has made me stand tall and unique amongst the all specially my recruiter & employer.




Thank you IAPMO India team for all your support and knowledge sharing. Your initiatives has immense contributions in making my career much brighter - I wish you all the best.

Bindu Kumar
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E-mail: bindukumar.v@gmail.com

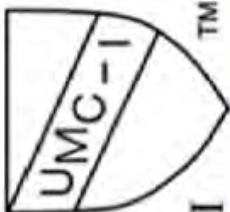


IAPMO India's Nomenclature for Marks of Conformity

<u>Mark of Conformity</u>	<u>Listing Type</u>	<u>Reference(s)</u>	<u>Required Criteria</u>	<u>Description</u>
	UIPC-I	Uniform Illustrated Plumbing Code – India (UIPC-I)	The product must meet a standard recognized or acceptable within the UIPC-I, and comply to the provisions of the UIPC-I.	This logo is for products that comply to their primary performance standard, recognized or acceptable within the UIPC-I, and also are certified to the UIPC-I.
	WEP-I & UIPC-I	Uniform Illustrated Plumbing Code – India (UIPC-I) + Water Efficient Products - India (WEP-I)	Same as UIPC-I listing criteria above plus the product must meet the respective star rating criteria per the 2013 WEP-I specification.	Same as UIPC-I listing description above plus water consumption measurement to be made per the Standard's procedure, and the respective star rating awarded per the 2013 WEP-I specification.
	Green WEP-I & UIPC-I	Uniform Illustrated Plumbing Code – India (UIPC-I) + Water Efficient Products - India (WEP-I) + Green Codes (GPCS-I/ GRIHA/ IGBC/ LEED, as requested by applicant)	Same as WEP-I & UIPC-I listing criteria above plus the product must meet green points criteria in GPCS-I and/or GRIHA and/or IGBC and/or LEED, as requested for evaluation by a product certification applicant.	Same as WEP-I & UIPC-I listing description above plus respective green points to be awarded by GPCS-I and/or GRIHA and/or IGBC and/or LEED, as requested for evaluation by a product certification applicant.

IAPMO India's Nomenclature for Marks of Conformity

<u>Mark of Conformity</u>	<u>Listing Type</u>	<u>Reference(s)</u>	<u>Required Criteria</u>	<u>Description</u>
	Green UIPC-I	Uniform Illustrated Plumbing Code – India (UIPC-I) + Green Codes (GPCS-I/ GRIHA/ IGBC/ LEED, as requested by applicant)	The product must meet a standard recognized or acceptable within the UIPC-I comply to the provisions of the UIPC-I, and meet green points criteria in GPCS-I and/or GRIHA and/or IGBC and/or LEED, as requested for evaluation by a product certification applicant.	Same as UIPC-I listing description above whereby this green logo is for products that might not consume water but that may still earn green points awarded by GPCS-I and/or GRIHA and/or IGBC and/or LEED, as requested for evaluation by a product certification applicant.
	Classified WEP-I	Water Efficient Products – India (WEP-I)	The product must comply to a national standard or an IS standard, and meet the respective star rating criteria awarded per the 2013 WEP-I specification.	This logo is for products that are not UIPC-I certified. The water consumption measurement to be made per the Standard's (ASME, international, or IS as approved by IAPMO) procedure and the respective star rating awarded per the 2013 WEP-I specification.
	Green Classified WEP-I	Water Efficient Products - India (WEP-I) + Green Codes (GPCS-I/ GRIHA/ IGBC/ LEED, as requested by applicant)	Same as Classified WEP-I listing criteria above plus product must meet green points criteria in GPCS-I and/or GRIHA and/or IGBC and/or LEED, as requested for evaluation by a product certification applicant.	Same as Classified WEP-I listing description above but that also include the respective green points awarded by GPCS-I and/or GRIHA and/or IGBC and/or LEED, as requested for evaluation by a product certification applicant.

IAPMO India's Nomenclature for Marks of Conformity

<u>Mark of Conformity</u>	<u>Listing Type</u>	<u>Reference(s)</u>	<u>Required Criteria</u>	<u>Description</u>
	UMC-I	Uniform Mechanical Code – India (UMC-I)	The product must meet a standard recognized or acceptable within the UMC-I, and comply to the provisions of the UMC-I.	This logo is for products that comply to their primary performance standard, recognized or acceptable within the UMC-I, and also comply to the provisions of the UMC-I.
	USEC-I	Uniform Solar Energy Code – India (USEC-I)	The product must meet a standard recognized or acceptable within the USEC-I, and comply to the provisions of the USEC-I.	This logo is for products that comply to their primary performance standard, recognized or acceptable within the USEC-I, and also comply to the provisions of the USEC-I.
	USPC-I	Uniform Swimming Pool Code – India (USPC-I)	The product must meet a standard recognized or acceptable within the USPC-I, and comply to the provisions of the USPC-I.	This logo is for products that comply to their primary performance standard, recognized or acceptable within the USPC-I, and also comply to the provisions of the USPC-I.

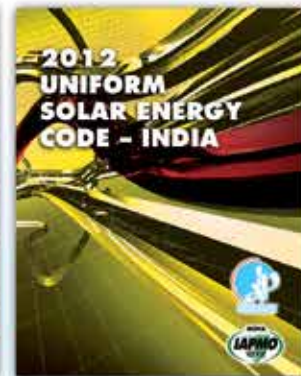
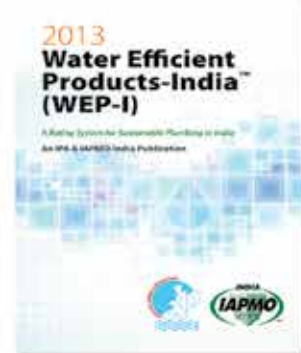


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