

# ***Fi*RE*Si*DE**

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## About the Cover

*"Beautiful dreamer, wake unto me,  
Starlight and dewdrops are waiting for thee;  
Sounds of the rude world heard in the day,  
Lull'd by the moonlight have all pass'd a way!"*

— Stephen C. Foster

*As we approach the end of the year, let us  
take time to pause and reflect, and enjoy the  
bountiful nature around - the trees, the sun  
and the dewdrops!*

- Photo by Bhuvana Kothapalli,  
Absorption Cooling



## Back Cover

## Festive fervour grips Thermaxians

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## WORDS OF WISDOM

**"Do what inspires you. Life is too short  
not to love the job you do every day."**

- Anonymous



# Contents

2

## WHAT'S NEW?

- Groundbreaking ceremony for WWS' new manufacturing facility
- TOESL commissions its first ZLD plant for a steel major
- Thermax commissions first biomass based cogen plant for an aluminium major on BOO basis
- Thermax Chemicals launches Maxtreat® 7800 TR, for cooling water treatment application
- Thermax Chemicals develops Tulsion® PRR 304 for phosphate removal
- TOESL provides green steam supply to a US pharma major
- CBG launches digital initiative, DigitalLeap 2.0
- WWS enters the palm oil industry with two export orders
- P&ES division implements LMS system for a cement manufacturer

6

## EXPRESSIONS

In this issue, Meher Pudumjee gives an overview of the ESG imperative, focussing on each of the three parameters. She briefly talks about the BRSR reporting followed by the key measures adopted at the COP27 summit recently concluded in Egypt. Further, she highlights Thermax's success stories and how they will play a role in India's energy transition journey.

8

## UP CLOSE

Venkatesh Balasubramanian, SBU Head, Absorption Cooling, in a conversation with Priyanka Sarode, elaborates on the key traits of a salesperson, the changing dynamics of the business while giving a glimpse of his professional and personal journey.

10

## ROUND UP

- Solar PV installation at Thermax's Sri City factory
- Thermax Cooling and Heating divisions celebrate sports
- TOESL completes more than 3,000 safe man-days without LTI
- Edge Live platform gets appreciated
- Devrai: Nurturing Biodiversity
- Energy plant increases efficiency for an MDF manufacturer
- Biomass fired steam boiler for a paper manufacturer in Dubai
- Business insights at 41<sup>st</sup> AGM
- Thermax offers a decolourisation solution for wastewater treatment to a healthcare facility

15

## AWARDS & ACCOLADES

- Thermax recognised with the prestigious Family Business Award
- ET honours Thermax with 'Factory of the Future' award
- 5S Platinum Certificate for Thermax's Sri City plant
- Thermax empanelled as an ESCO company

16

## EVENTS & EXHIBITIONS

- Clean air, clean energy and clean water solutions showcased at Boiler India
- First all-digital stall at IFAT 2022
- Cooling and Heating portfolios presented at FoodPro Expo
- Refrigeration & HVAC Indonesia
- ISHRAE Chiller and Heat Pump Conclave
- Water Conservation Conference
- Waste Technology Expo 2022
- CBG participates in industry-specific exhibitions
- Service Engineer Conference 2022
- Paper presentation at a conference by SOPEP
- International Palm Oil Conference

A special feature on four women welders recruited at Shirwal's welding facility

22

## DIVERSITY AND INCLUSION

- Narendra Prajapati bags the Asia Book of Records certificate
- Dhyani Parmar wins first prize in a folk dance contest
- Veerendra Rasela completes ultra marathon

24

## LIMELIGHT

This article highlights the importance of self-reflection and provides tips on how to engage in a meaningful reflection practice

25

## SIGNPOSTS

31

## VOICES

- Richa Kapila from WWS talks about her rewarding experience with Thermax
- Rishi Hiran from WWS expresses gratitude for the many opportunities given by Thermax

34

## SLICE-OF-LIFE

- Anna Sacks' journey from trash to treasure
- The psychology of colours in football
- And this clever joke!

# What's New?

## New Advanced Manufacturing Facility gets ready for WWS

Thermax officially broke ground on its new advanced manufacturing facility for the WWS division at a ceremony held on 24<sup>th</sup> July.

Focussing and aiming for higher business targets, the state-of-the-art 4,800 m<sup>2</sup> facility will be built besides the Environment House, Bhosari, incorporating modern technology and process automation. This will result in the reduction of overall turnaround time with increased outputs for manufacturing and assembly lines. The new plant

will be undertaking the manufacture of vessels, assembly, and warehouse, and aims to earn the IGBC green certification.

With this, WWS continues to make efforts to meet the ever-increasing capacity demands and to advance business continuity.



MD and CEO Ashish Bhandari, along with other leaders, at the groundbreaking ceremony

WWS team in a frame



## TOESL inaugurates the first ZLD plant for a steel major

Thermax Onsite (TOESL) recently commissioned a 75 kilolitre/day Zero Liquid Discharge (ZLD) plant at the premises of a steel major in Sahibabad, Uttar Pradesh. Vice President of the steel plant and TOESL CEO, Khushboo Bhatia, inaugurated the plant and also celebrated a safety achievement of 40,000+ safe man-hours.

Under the Build-Own-Operate model, TOESL has invested and built this plant to treat and recycle the effluents generated in the customer's tube mill, offering Multi Vapour Recompression (MVR) based evaporator technology along with comprehensive operation and maintenance. With this installation, TOESL has diversified its operations to cater to the steel industry.



TOESL and customer teams at the newly inaugurated ZLD plant

## Thermax commissions first biomass based cogen plant for an aluminium major on BOO basis

Thermax recently commissioned a 33 TPH hybrid water tube biomass fired bi-drum boiler with a reciprocating grate, designed at 67 kg/cm<sup>2</sup> pressure, for an Indian aluminium and copper major in Belagavi, Karnataka.



The fuel shed followed by boiler house and turbine house

The cogen plant shall be owned and managed by Thermax Onsite (TOESL) under the Build-Own-Operate model.

The boiler has been designed to run on a mix of biomass briquettes and loose biomass fuels to generate 4 MW power as well as provide steam for processes, replacing the customer's existing oil fired boiler. To address the ~200 tonne/day of biomass fuel requirement, TOESL has developed dedicated fuel manufacturing facilities to ensure optimum fuel quality and quantity across the year.

With this project, the customer is relieved of the responsibility of operating and managing part of their steam and power requirements while also achieving nearly 48,000 tonne/year of equivalent CO<sub>2</sub> reduction against furnace oil.



**New**  
**Product**  
**Launch**

## Zero phosphate based corrosion and scale inhibitor for cooling water treatment application

The growing concern over the environmental impact of phosphorus, and in particular toxic algae blooms in natural bodies of water, is leading to the development of non-phosphorus chemistry for cooling water treatment. The allowed levels of phosphorus in water blowdown from cooling towers are becoming increasingly stringent, and zero phosphate treatment will become mandatory across the globe in the future. Deposition/scaling is another major issue in the cooling water circuit as phosphate based programmes need more antiscalants to maintain  $\text{PO}_4$  in solution, and this may pose a limitation on pH.

Thermax has introduced Maxtreat® 7800 TR, a zero phosphate based corrosion and scale inhibitor for cooling water treatment application. This product has an in-built yellow metallurgy corrosion inhibitor and does not contain phosphate in any form, be it organic or inorganic. The newly developed treatment programme provides performance equal to that of phosphate and zinc, and antiscalants-based programme without using either of them.

### Advantages

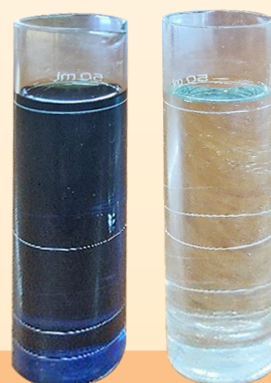
- Allows meeting stringent phosphate discharge norms
- Eliminates the risk of calcium phosphate deposition
- Compatible with oxidising as well as non-oxidising biocide
- Less nutrient promoting biological/algae growth
- Combination of scale inhibitor, dispersant and corrosion inhibitor
- In-built noble metallurgy corrosion inhibitor
- 24 x 7 real-time monitoring through ThermRead, resulting in water treatment cost optimisation

## Tulsion® ion exchange resins for phosphate removal

Phosphorus is naturally found in sediments, plants, and in the human body, and is even required in small amounts. But too much can cause eutrophication in groundwater and surface water. High phosphate levels can also increase algal biomass and cause deoxygenation of water resulting in the release of sediment-associated pollutants (metals, micropollutants).

Nowadays, stringent limits on phosphate discharge are being imposed and it can be capped as  $< 2 \text{ mg/l}$  in effluents by some environmental agencies. Various methods are available for phosphate removal, and ion exchange resins can be one way to remove phosphate ions from water.

Thermax Chemicals has developed a novel selective resin - Tulsion® PRR 304 for phosphate removal. This resin has high selectivity for phosphate in the presence of bicarbonate, carbonate, sulphate, chlorides etc. Its modified functionality is unique and can work in conditions of extremely polluted water.



*Reduced effluent phosphate levels (right) after using Tulsion® PRR 304*

### Advantages

- Tulsion® PRR 304 is tested extensively in the lab and industrial plants
- It has high operating capacity with very low phosphates in treated water
- It can be used in filtration units of aquariums, fish ponds, fish tanks, and drinking water tanks, domestic and industrial waste effluent treatments



A 10 tonne/hour biomass fired hybrid boiler deployed by TOESL

## Green steam supply to a US pharma major in Gujarat

**T**hermax Onsite (TOESL) partnered with a US-headquartered generic and specialty drug products major to supply biomass based steam to their process plant in Palli (near Ahmedabad), Gujarat. TOESL deployed a 10 tonne/hour biomass fired hybrid boiler, managing the biomass fuel supply chain and undertaking the capital investment and comprehensive operations and maintenance of the boiler plant.

Through the Build-Own-Operate model, TOESL shall deliver green steam under a long-term steam supply agreement, with guaranteed plant performance.

## A leap forward for CBG

Taking a step towards innovation this quarter, the channel team launched its digital initiative, DigitalLeap 2.0.

This initiative aimed

at supporting our network of 90+ channel partners in their journey towards adapting to social media. The channel business network embarked on its first ongoing campaign, #AcceleratingSustainabilityTogether, where relevant division-wise posts were shared with the TCAs for posting on their respective handles along with their organisation's posts.

The exercise proved to be a rewarding one - within two months, a hashtag that had zero mentions crossed 700 mentions across multiple social media channels, with over 65 of our partners actively posting.

On the orders front, the Channel Business Group continued to dominate the beverage industry, winning major orders for bottling companies and winning the first reciprocating grate boiler order.

With the channel business going ahead in full throttle both digitally and offline, CBG anticipates a bright year ahead!







## WWS enters the palm oil industry by commissioning two export orders

**E**nhancing our commissioning capabilities, execution expertise, and project management skills, we have extended our sustainable solutions along the coastline of the Indian Ocean with the installation of complete water and wastewater management system for renowned palm oil manufacturers.

Two renowned palm oil manufacturers from Kenya and Indonesia were having a requirement of a one-stop solution for the treatment of highly polluting effluents coming from refineries.

The Effluent Treatment Plant (ETP) of 854 KLD for the Indonesian group is based on proven wastewater treatment plant technology, wherein the plant effectively treats highly polluting effluents from biodiesel streams, glycerine streams, and refinery wash water.

For the palm oil manufacturer in Kenya, prefabricated and skid-mounted units of a water treatment plant (80 KLPH), an effluent treatment plant (275 KLD), and two sewage treatment plants (120 KLD & 60 KLD) were installed.

The palm oil major from Kenya was delighted and awarded a certificate of appreciation for excellent planning and smooth execution with utmost safety at the site. The plants are effectively running to consume less operational expenditure (opex), have a smaller footprint, and assure stringent outlet guarantees as per respective government requirements.



▲ A wastewater treatment plant installed for the customer in Indonesia



◀ An ETP installed for the palm oil manufacturer in Kenya

## LMS system increases efficiency for a cement manufacturer



The LMS system installed for a cement manufacturer in Andhra Pradesh, India

**A** Load Management System (LMS) facilitates efficient capacity utilisation and maximises the generation of power from the cheapest sources. Recently, Thermax's Projects and Energy Solutions division successfully implemented the system for a renowned cement manufacturer in Andhra Pradesh, India.

Carried out on an EPC basis, the system integrates captive power plants of configurations 2 x 18 MW, 1 x 6 MW and 3 x 9 MW (waste heat recovery).

The delighted customer appreciated the installation for maximising the generation of power from WHRB, increased reliability, saving in operating cost and most importantly, smooth load sharing without affecting operation.



# Expressions



As industries, we have always looked for ways to become more operationally efficient, profitable, and increase shareholder value, but with climate change happening, for the first time ever, we are treating the planet as an important stakeholder.

After nearly two years of isolation thanks to Covid, it felt so good to see many of you come together for the festivities of Navratri – in your finery, looking lovely and happy!

I would like to start this issue of Fireside with two events I recently attended and share some insights. I was invited as Chief Guest at an inter-collegiate contest, Aakruti, organised by Dassault Systemes, promoting sustainability and inclusiveness. Dassault is a global company that provides customers the ability to create new innovative products and services on a virtual experience platform, solving some of the world's major challenges today.

It was indeed a pleasure to witness youngsters full of ideas, trying to innovate and find solutions to real-world problems. This year they were keen that every team should have at least one girl student. They are trying to reach out to universities that may not be as well known but have bright minds!

I really liked what the jury members had to say. They spoke of two thoughts that struck a chord – one is that it is extremely important to 'define' the problem statement and what you are trying to solve. Only then will you be able to put the relevant resources together and solve for the right outcome. We saw that recently in our discussion during Project Sprint and the need for automation and IT, where we need to see the problem definition stated by the division and clearly understood by both, the enabler and the user so that money, talent and time can be better put behind that initiative.

The second point was the importance of diversity in teams since any real-life problem involves the Arts, Science, Commerce, and to my mind, the 8 Cs I've learnt at Teach For India – creativity, critical thinking, compassion, courage, collaboration, communication, curiosity and consciousness. No one dimension, either of a skillset like engineering or one gender can

bring this richness and therefore the need to put together relevant and diverse teams; and then being able to keep our egos aside, listen to each other, absorb, learn and work together to achieve that outcome. World over research has shown that having diversity in teams makes for far better decision making. For example, in designing a product, apart from the engineering aspect, there is ergonomics, colour, aesthetics, serviceability, social implications (for products going into less urban environments) and so on. And therefore, recruiting and putting together people from different backgrounds, geographies, gender, and different skillsets would make for better outcomes. Let's make a start with the addition of many more women at Thermax, whether engineers or otherwise.

The other was an interview by the Financial Express that focussed on the ESG imperative. Thankfully, the 'E' (Environment) impact of



ESG is gaining a lot of traction today. As industries, we have always looked for ways to become more operationally efficient, profitable, and increase shareholder value, but with climate change happening, for the first time ever, we are treating the planet as an important stakeholder.

The COP27 summit that recently concluded in Egypt has restored hope for our stressed planet. It carried forward the legacy of Glasgow – mainly on fossil fuels and emission reduction, by agreeing to keep the 1.5-degree temperature rise target alive with countries agreeing to 'phase down' coal use. For a country like India, it would emphasise energy security and the use of coal, which we have in plenty, in order to bring down our dependence on oil & chemical imports and provide electricity to our masses. However, can we do so along with some form of carbon capture and utilisation is the key.

For the first time, the meeting also announced a 'loss and damage fund' to help the most vulnerable countries recover from climate disasters. However, financing for climate initiatives, whether for technology transfer, mitigation or adaptation, remains a work in progress.

Recently, we had our first Indian bus with its air conditioning powered by exhaust gases ready for a test drive with passengers – congratulations to the entire team! Looking forward to

some good results and fuel saving for the customer. We also had Amrit Lal Meena, Secretary, Ministry of Coal, visit our factory to witness the very good work that our team at RTIC has put together with regard to coal gasification. We have demonstrated that Indian high ash coal (up to 45%) can be gasified and cleaned to produce methanol (or syngas), with a concentration of carbon dioxide (CO<sub>2</sub>). In our coal gasification plant, the CO<sub>2</sub> released is concentrated, making it carbon capture ready. We have a solution, wherein this CO<sub>2</sub> combined with hydrogen, can produce more syngas, which has its use in various chemicals. Hopefully, we will be in a position to work towards demonstrating a larger pilot over the next few months.

Every year in November, India enjoys a hearty kharif or rice harvest season, but the flip side of a good yield is an abundance of waste paddy straw stubble which is burned in farms. The impact of this burning (apart from other factors) leaves northern India, especially parts of Delhi NCR and Punjab regions, choked by smog. To address this issue, Thermax, along with a partner, has launched a technology to convert this waste into bio-CNG, used predominantly in vehicles. The technology is a promising solution to replace carbon-positive fossil fuels and reduce the import costs for natural gas - a win-win!

Apart from 'E', there is the 'S' (Social) component in ESG, which we may also want to focus on. How are we going to be 'responsible' companies / owners / citizens of the world in all aspects? One is with regard to the planet, and the other is with regard to people – but the definition of people is not just employees on the rolls of a company, but those that each company has an influence over – because they are human beings and require to be taken care of in terms of wages, safety, upskilling and so on – if we don't, who else will? Moreover, a responsible company

is a successful company in the long run. However, this needs a positive shift in mindset, right from the top of an organisation, percolating down to every individual. Just as investors, credit rating agencies, banks, pension funds and others are demanding responsible action for environmental well-being, a similar push for the 'social' dimension needs to happen.

On the Social front, you all know about the SoCo initiative. I wrote about it in Fireside a few months ago. Dasra has 40 companies who have signed up for the movement, but that's still a drop in the ocean. There are many more we would like to get onboard to be more accountable for the 'S'. I do know that safety at Thermax is non-negotiable with regard to our manufacturing shop floor and sites. Can we start looking at safety within our procurement teams, with some of our long-term vendors / fabricators? At present, some of the outcomes we track are as per the law; but the real benefit of SoCo will kick in once we start looking beyond. That's when each of us will ask the question – 'how do we make lives more equitable and dignified for people in our entire ecosystem – those we have an influence over?'

With India taking over the G20 presidency, the country has a unique opportunity to chalk measures for global welfare and promote sustainable, inclusive development. Thermax will continue to be at the forefront of India's transition to cleaner energy sources but will also continue its responsibility to all its stakeholders.

On that positive note, I would like to wish all of you and your families a very happy, healthy and fulfilling new year.

Warmly,  
Meher

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Can we start looking at safety within our procurement teams, with some of our long-term vendors / fabricators? At present, some of the outcomes we track are as per the law; but the real benefit of SoCo will kick in once we start looking beyond.

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# Up Close

***“We, as a team, believe in doing things differently and facing challenges head-on.”***

Venkatesh Balasubramanian, SBU Head, Absorption Cooling, in a conversation with Priyanka Sarode, elaborates on the key traits of a salesperson, the changing dynamics of the business while giving a glimpse of his professional and personal journey.



“If one door closes, the other will open,” says Venkatesh (or Venky, as he is fondly called) Balasubramanian, SBU Head, Absorption Cooling, reflecting his positive attitude and perseverance – the key strengths he believes are crucial when it comes to sales and marketing.

Venky joined Thermax as a GET in the HRD (Heat Recovery Division) in 1996 in Pune. HRD was later merged with PHPD (Process Heat Projects Division) to form ESD (Energy Systems Division). Post this brief stint, he was placed in Absorption Cooling as a Service and Commissioning Engineer in Hyderabad. “I am thankful to the support of my seniors and the HR team then, who ensured that we would continue our job in Thermax following our exit from ESD,” he says. “Here, we dealt with the first of its type chillers and took care of service-related issues. Soon I realised that this was not my cup of tea, so I decided to move to sales,” he adds.

Thereafter, Venky moved to Bangalore to take responsibility for franchise sales for Cooling in South India. He was then promoted to the position of Business Manager for the South region. He returned to Pune in 2005-06 as the National Sales Manager, where he was instrumental in starting application development in Cooling. In this period, Venky led many first-of-their-kind projects like inlet air cooling. He went on to become the Global Sales Head in 2008-09.



In discussing his professional trajectory, he says, "I have been fairly confident throughout. I have enjoyed taking up new challenges and exploring unknown territories. I believe that's how we grow. Also, my seniors always supported and showed confidence in me."

The Absorption Cooling portfolio faces many unprecedented challenges in terms of price scenarios, raw material imports, etc., which are beyond our control. "We, as a team, keep on attempting different sales strategies, which have helped us learn in the process," he states.

In light of the changing dynamics in Cooling sales, he says that the global energy scenario is undergoing a sea change. With green technologies coming into play, some of the energy costs that used to be higher are coming down. He explains, "The absorption chiller may be viable at a certain ratio, but as soon as the ratio changes, it may become unviable. Therefore, the business is dependent on many factors that cannot be controlled by the company. It is these scenarios that determine whether or not your technology will succeed. It has become more of a consultative selling approach, where one needs to understand the customer's system before offering a solution."

When asked to highlight some key projects in his career, Venky

talks about his period in national and global sales, where he and his team developed many applications which are universally accepted now. He reminisces about his short but rewarding stint in China where he was deputed from 2012 to 2017 to manage sales for an absorption cooling subsidiary. In spite of the turnaround performance of the subsidiary, it had to close due to geopolitical issues.

It was in 2018-19 that the Cooling business shifted from Pune to Sri City. Describing the early days of the business setup at Sri City, which is one of its finest facilities of the company, he says, "It was a clean slate. We decided to build a lean manufacturing setup using much digitalisation. It was also a good experience to train an all-new team at the facility. The plant is equipped with robotic welding machines, digital manufacturing installations and some very good processes, which makes it a state-of-the-art infrastructure."

What will be the next big thing for absorption cooling? "The next big thing for us would be to move into allied technologies which are related to energy saving and green solutions in cooling, refrigeration and heating spaces that can help in energy or water conservation. Getting into customised refrigeration can be a big opportunity for us to

tap into. With the advancement of absorption technologies, a lot of latent markets will open up. Although we have established ourselves in many of these areas to some extent, we have not really proliferated them on a global level. We hope to expand in these areas in the coming year."

When it comes to his leadership style, he believes he is friendly with people and adopts a strategic approach when it comes to sales. He also feels that he is lucky to have a very understanding team which has helped him in his success so far. "We, as a team, believe in doing things differently and facing challenges head-on. That we stand united in our vision is what makes us all strong and successful," he says.

Outside the office, he likes spending time with his friends and occasionally catching up with old school buddies or ex-Thermaxians. A cricket buff, he also enjoys watching football, badminton and tennis. He fondly recalls his time in China, when he played tennis and badminton, but since returning to India, he has been playing badminton. Another thing that holds his interest is his Kindle, which he calls his 'companion'.

In conclusion, he thanks his family – his wife, Priya, and his children – Nirupama and Omkar for being accommodating and patient with him.

Giving a piece of advice to the youngsters, he quips, "Deserve before you desire. Every individual has certain abilities, but only by preparing for the job and raising the bar will you experience success. Perseverance is the key."

***The next big thing for us would be to move into allied technologies which are related to energy saving and green solutions in cooling, refrigeration and heating spaces that can help in energy or water conservation.***

# Round up

## Taking the next step towards carbon neutrality

**F**rom rainwater harvesting to using recycled materials for various projects, Thermax Sri City factory, a world-class 4.0-ready manufacturing unit, has been implementing many sustainable initiatives to go carbon neutral since its inception. The platinum certificate by IGBC (Indian Green Building Council) is a testament to this claim. To raise the bar even higher, the factory installed a 1 MW solar plant in the month of July on the rooftop of the building and parking lot to offset carbon emissions.

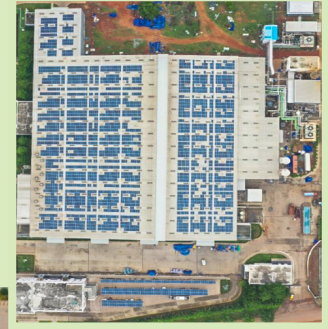
The outcomes:

- 12 MW of electricity unit saved per year
- 920 tCO<sub>2</sub>e of carbon dioxide equivalent offset per year

- Rs. 26.04 lakh of electricity cost saved per year
- 70% of total plant energy consumption comes from renewable energy

In addition, the solar plant is connected to an IIoT application and monitored in real-time to ensure maximum efficiency all the time.

1 MW solar PV installation on the building rooftop and parking lot (below)



## Get Set Sport!

**T**he HR team of Thermax Cooling and Heating divisions brought out the sporty side of employees with 'Get Set Sport', dedicating the entire July month for the ones who like to sweat.

From wrecking brains for the next winning move in chess to swinging the bat hard to score a six in cricket, the event held a variety of sports to rekindle the passion for sports in the hearts of grownups.

It was a great time, indeed!



At a game of chess

## Putting safety first

**T**hermax Onsite (TOESL) recently completed more than 3,000 safe man-days without any lost time injury (LTI) since the inception of steam supply operations at the Ranjangaon plant of a food major. At the Tirupati plant of their drugs and pharma customer, TOESL completed 1,000 safe man-days without any LTI since its inception.

TOESL site teams, along with the customers' plant teams, celebrated these milestones by taking the safety oath, discussing safety-related challenges and how the teams overcame them. The TOESL team received appreciation from the customer and was also felicitated with mementoes to mark this achievement.

Discussing the safety-related challenges



TOESL and the customer teams celebrate the safety milestone





## Edge Live platform gets appreciated!

**T**hermax's Operations and Maintenance Services offers cutting edge digital solutions to the industry for improved

plant performance and enhanced uptime. One of our esteemed customers, Sudarshan Chemicals, has appreciated the digital platform, Edge Live and O&M team's efforts to upkeep the cogeneration plant's performance.

Comprehensive knowledge management for the plant is being done remotely from our command centre in Pune.



## Devrai: Nurturing biodiversity

### Benefits of a man-made forest:

1. **A library of trees:** One can study the trees as per the grids in which they are planted.
2. **Seed bank:** A Devrai can be a source of a variety of seeds that can be planted in city settlements.
3. **Seed disposal:** Birds, bees and flowers can contribute to the pollination of seeds which can revive our lost jungles.
4. **Meditation centre and more:** A Devrai can serve as a meditation centre as well as a place to celebrate birthdays, occasions and get-togethers. It can also be developed as a centre for agriculture tourism. This man-made Devrai also serves as an oxygen bank.



Raghunath Dhole is responsible for gardening development and maintenance at Thermax's Shirwal factory. What sets him apart is his passion for plantation and his love for trees. In the last 36 years, Raghunath has donated 25 lakh saplings for plantation. His passion led him to establish the Devrai Foundation in 2013 to promote his efforts.

'Devrai' means a self-sustaining natural forest that has been preserved for thousands of years. Raghunath says, "Man has, over time, destroyed forests to meet his needs. Consequently, this has led to the need to create man-made forests. Thus the concept of man-made Devrai came into existence. There is a plantation structure that is followed while constructing a Devrai. A total of 515 saplings comprising 119 species of indigenous variety are planted in a Devrai. The plants are watered using drip irrigation technique."

As part of India's 75<sup>th</sup> Amrit Mahotsav celebration, Raghunath and his team successfully planted 75 new Devrais. "As of today, 186 Devrais and 43 urban dense forests have been planted in and around Maharashtra," he informs.

Raghunath believes that earth is home to all flora and fauna, and it's man's duty to preserve all of them.

Raghunath Dhole





## Customers benefit from the Heating division's EPC projects

### Energy plant increases efficiency for an MDF manufacturer

**A**n energy plant of 31 MW capacity was successfully installed for an MDF board manufacturer in Hoshiarpur, Punjab. The energy plant is a unique offering that provides heat via three heating media viz. steam, thermic fluid and hot air, from the same combustor. Heat from these three media is utilised at various points in the MDF manufacturing process.

The unit has been designed to run on wood chips/sander dust/reject fibre/sawdust. This unit can also fire cutting and trimming section dust which is generated as process waste.

The energy plant EPC package includes the supply, installation and commissioning of the boiler, heater, ESP, fuel and ash handling systems.



*31 MW capacity energy plant commissioned at Hoshiarpur, Punjab*

This energy plant has supported the customer in increasing their MDF manufacturing output from 600 cbm to 950 cbm.

### Biomass fired steam boiler for a paper manufacturer in Dubai



*The boiler house commissioned in Dubai*

**A**s part of their capacity expansion initiative, a biomass fired steam boiler of 35 TPH capacity, and 25 kg/cm<sup>2</sup> pressure was successfully commissioned for a recycled paper manufacturer in Dubai.

The boiler was supplied and commissioned along with a bagfilter, a fuel handling system and a submerged ash conveyor.

The unit has been designed to run on 100% waste wood chips as a primary fuel and biomass pellets - a mix of date palm trunks and old woods.



## Business insights at 41<sup>st</sup> AGM

**T**he 41<sup>st</sup> Annual General Meeting held virtually on 2<sup>nd</sup> August provided shareholders with insights into the business happenings of the year gone by.

At the onset of the conclave, Chairperson Meher Pudumjee officially welcomed Dr. Ravi Gopinath, who joined the Board as an Independent Director. On the occasion, she thanked Dr. Valentin von Massow for his contribution to the company, whose tenure as Independent Director ended on 21<sup>st</sup> July. She said, “Valentin had been associated with Thermax since the year 1999-2000, when he was the MD of Boston Consulting Group in India, and had led a very successful turnaround of our company while Anu Aga was chairing the company. It's after his early retirement from BCG, that he joined our Board and he's been a great pillar of strength, both in the boardroom as well as outside.”

In her address to the shareholders, she narrated the key highlights of the business over the past year, along with division-specific performance. She also spoke on the latest product launches and success stories.

In light of climate change and countries pledging

net zero emission targets, including India, she asserted that Thermax can aspire to be a partner in the energy transition journey for customers and help them move towards lower emissions, thus conserving resources. Furthermore, she highlighted the challenges to Thermax's businesses arising out of the geopolitical tensions and increased commodity and freight prices.

Talking about attrition, she commented, “Our attrition is close to 13.9% for 2021-22. Since September 2021 though, trends have slowed and some actions have been taken within Thermax to retain our particular talent.”

Her remarks also touched on the new performance management system which is more holistic now with a focus on CLOCC behaviours. She informed that the company has recently introduced ESOPs (Employee Stock Option Plans) in the form of performance related RSUs (Restricted Stock Units) for the Executive Council. She further updated the audience on Thermax Finance Services, a platform created for automated and faster financial transactions.

As part of her address, she threw light on the activities conducted under the aegis of the Thermax Foundation in association with Akanksha Foundation and iTeach, an NGO that supports children from Teach For India. Thereafter, an overview of the CSR activities and updates on SoCo were given.

Meher's address was followed by an interaction with a few shareholders. MD and CEO Ashish Bhandari also shared some business insights.

The proceedings concluded with a press conference.



*Meher Pudumjee addresses shareholders during the virtual AGM*



*The decolourisation system installed at the hospital in Mumbai*



# Thermax offers an affordable decolourisation solution for wastewater treatment to a healthcare facility

## Introduction

Clean and clear water is a necessity for every home, facility, or office. This is especially non-negotiable if we are talking about water use in a healthcare facility. But with the heavy usage of water in any medical institution comes the necessity of reusing water whenever possible.

The customer (a hospital in Mumbai) was a user of Membrane Bioreactor (MBR) based STP for the treatment of wastewater. However, the water produced by the MBR plant was pale yellow. As a result, the facility could not reuse the treated wastewater to flush toilets. Not only was the pale yellow colour giving an impression of an unhygienic environment, but it also demanded external water supply by tankers for toilet flushing, incurring additional operational costs. Though the treated wastewater was meeting quality parameters, the unappealing colour was interfering aesthetics and perception of users from the hospital. This resulted in a lot of complaints from the occupants and was negatively affecting the reputation of the hospital. The customer thus approached Thermax for a solution.

## Challenge

After understanding the customer's needs, Thermax realised that the colour was due to the presence of different constituents in the treated wastewater. High running costs made it impractical to use a chemical-based colour removal system. It may also have been difficult to monitor and control process parameters.

So, the suggestion was to use a resin-based colour removal treatment. However, they were unable to obtain sufficient data on resin performance when wastewater with a mixture of constituents was used as a feed. Additionally, the team faced space constraint issues.

## Solution

Thermax continued with its proposed resin-based treatment solution to remove COD (Chemical Oxygen Demand) causing colours from the MBR-treated water. The resin used in the proposed solution was a type 1 strong base anion resin, that excels in removing colour and organics. This resin is used especially for decolourising sugar syrups.

Due to insufficient resin performance data, a new solution was demonstrated on a pilot scale in the field. Operations of the pilot unit were critical not only to generating data but to understanding the performance on variable feed conditions.

## Result

The customer witnessed the on-site demonstration and partnered with site activities. After completing the pilot trials and proving the success of the performance of the technology suggested, the hospital placed an order for a decolourisation unit with a capacity of 2.5 m<sup>3</sup>/hr. The system was designed by considering 5 gm/litre of COD load per litre of resin. The said system is continuously running with trouble-free operation.

This solution also proves it can serve the urbanisation sector to remove the colour from treated wastewater. It helped the customer achieve colourless water, eliminated dependence on other sources of water, reduced freshwater footprint and enabled necessary wastewater reuse.

The added benefits included lower operating costs, a more reliable system with less manual intervention and higher system OBR (Output Before Regeneration).



*Inlet water and treated water quality (right) from the decolourisation unit*



# AWARDS & ACCOLADES

## Thermax recognised with the prestigious Family Business Award

It was a proud moment for Thermax to receive the University of Vermont Family Business Award. The 11<sup>th</sup> award ceremony was held at the University of Vermont Grossman School of Business, US, on 7<sup>th</sup> October.

The award recognises and celebrates family-owned enterprises that have demonstrated a commitment to responsible business practices through effective leadership, innovation, and strong family and community stewardship.



## ET honours Thermax with the 'Factory of the Future' award

Thermax was recently conferred with the 'Factory of the Future' award at The Economic Times Promising Plants 2022, held at Novotel, Pune, on 23<sup>rd</sup> August. An initiative by the Economic Times, supported by The Machinist and the ET Polymers magazines, the award recognises excellence in manufacturing.



## 5S Platinum Certificate for Thermax Sri City plant



After receiving 5S Gold Certification from Quality Circle Forum of India (QCFI) previously, zone leaders and 5S team members of Sri City factory further improved their adherence to quality, which enabled the team to showcase improvement in 300 parameters in the audit that happened in mid-September.

Acknowledging Thermax's progress, QCFI awarded the Sri City plant with 5S Platinum Certification for the year 2022-23.

One of the auditors commented, "Today's audit at Sri City plant was a visual delight to us, and the team has made remarkable improvement from the previous audit."



## Thermax is now an ESCO company

Adding another feather to its cap, Thermax has been recently empanelled as an Energy Saving Company (ESCO) by the Bureau of Energy Efficiency (BEE). The accreditation was granted after a detailed assessment based on stringent criteria set up by BEE.



## Showcasing solutions in Clean Air, Clean Energy and Clean Water at Boiler India 2022

Themed 'Thermax For A Better Tomorrow,' we displayed our repertoire of offerings as 'One Thermax' in the areas of clean air, clean energy and clean water at Boiler India, a global conclave of boiler and allied industries. The same was held from 14<sup>th</sup> to 16<sup>th</sup> September at CIDCO Exhibition and Convention Centre, Navi Mumbai. A prestigious exhibition in the manufacturing and heavy industry sector, the three-day exhibition saw over 10,000 visitors at the Thermax booth.

Sharing his thoughts on the exhibition, MD and CEO Ashish Bhandari said, "In any industrial process that generates energy in the form of steam or power, boilers are at the epicentre, allied to many other components and solutions that contribute to energy

efficiency and environment-friendly operations. Boiler India was an ideal platform for Thermax to showcase its entire basket of offerings in the energy and environment domains aligned towards a better tomorrow."

The wheels for the event started rolling months in advance. This was the first time we had conducted a two-hour training session for all representatives manning the booth. The event also saw the actual implementation of the brand guidelines following its release, for booth design, colour schemes and overall look and feel.

Another highlight was the Thermax Gallery which allowed visitors to walk down memory lane as it covered important milestones since the inception of the company. It also featured some selected and thought-provoking advertisements from Thermax's archives illustrating how Thermax was relevant then and is relevant now!

From the energy product basket, we showcased the reciprocating grate, an actual electric boiler, a scaled down model of a MSW fired boiler and a heat pump chiller. We



*A glimpse of the Thermax booth*





displayed our bestselling products for air pollution control - a model of an electrostatic precipitator and a bagfilter used widely in process-driven industries. Also exhibited were RealSteam, steam dryness measurement device, and steam accessories along with construction and water treatment chemicals.

Along with our green solutions, Thermax also displayed its digital platform – Thermax Edge Live, an asset performance enhancement solution, that caters to the utility needs of the customers.

Alongside the exhibition, the event also held seminars on pertinent topics catering to the boiler industry. Our colleagues from the Heating division - R.S. Jha, Head, Innovation; Rohit Khindri, Lead – Innovation Engineer and Bharat Pathak, PU Head presented on the topic - 'Real-time performance monitoring using latest sensing and measuring devices'. R.S. Jha along with Pramod Shigarkanti, Head, Detail Engineering presented on 'Boiler design optimisation through safety aspects', while Hrishikesh Bawane, Group Head – QAC, presented on 'Information about Appendix 'J' of IBR'.

The platform provided a good opportunity for networking and interacting with customers, resulting in a good number of enquiries and orders. A Salesforce-based lead management app helped our executives tap customer enquiries and register leads effectively. Over 200 leads were generated across divisions. A well-planned and streamlined social media and digital campaign via emailers and social media posts also achieved significant traction.

Overall, the expo was a delightful and rewarding experience for all participants. Kudos to the Boiler India team!



## Leadership series



Clean Air



Clean Energy



Clean Water





## First all-digital stall at IFAT 2022

Thermax participated in the 9<sup>th</sup> edition of IFAT India 2022, India's leading environmental technology trade fair, held at the Bombay Exhibition Centre, Mumbai, from 28<sup>th</sup> to 30<sup>th</sup> September, wherein Water and Waste Solutions and Chemicals together showcased their offerings.

The exhibition theme was centred around digitalisation in Thermax and one-stop integrated solutions for the water industry.

With a focus on innovation and digitalisation, Thermax created the first-of-its-kind Thermax Experience Centre for an immersive experience for our visitors at the stall. In order to provide our visitors with a better understanding of our products, we created 3D turntables and walkthroughs with hotspots displaying models of new products, such as atoM, CuBe, MEE and MVR (Multi Effect Evaporators), as well as more advanced solutions. A backend application integrated allied chemicals with water solutions. Each of these four products were 3D printed and integrated with virtual information and tours on tabs through individual NFC (Near Field Communication) or QR links.

Similarly, a digital stall was also designed in exactly the same way, which seamlessly allowed virtual visitors to explore our offerings from remote locations if they missed visiting our stall. The visitors could also interact and explore the booth virtually on their mobile phones by scanning the NFCs or QR codes at the stall.

Besides Tulsion® ion exchange resins, all integrated offerings from Chemicals were presented with interactive modules for each section. Construction chemicals were displayed for the first time, attracting customers for both the industrial and urban segments. The ThermRead Plus model, an automated dosing and monitoring system for cooling tower systems, grabbed the attention of the audience.

The main attraction was the 'Thermax Edge Live Command Centre,' which featured live streaming of four sites for water treatment plant (WTP),

*Presenting the first-of-its-kind Thermax Experience Centre for an immersive experience*



zero liquid discharge (ZLD), incinerator and ThermRead from different locations.

The 'What's New zone' enhanced our customers' experience with new products and solutions in water, chemicals and construction chemicals.

The customers learned how digitising their water systems could help them with monitoring and improvements. Edge Live dashboards for Heating and Cooling were also demonstrated to customers as part of an integrated 'One Thermax' approach. Our collaborative efforts through real-time enquiry management app - Helpie allowed the team to map more than 700 interactions, 200 plus leads with 500 plus virtual visits across the globe. A dedicated timed-internet lease line for customers enabled seamless interactions and empowered engagements.

Instead of showcasing offerings in traditional methods with backdrops, this exhibition used an environmentally-friendly paperless approach for an immersive experience. The Thermax stall became the 'talk-of-the-town' at the exhibition, with companies across the industry visiting to see the digitisation implemented.

This trade fair witnessed over 10,000 visitors from across the globe and more than 250 exhibitors from 22 countries, including pavilions from Austria, Germany, Norway, Poland, and Switzerland.



*Our range of construction chemicals displayed at the expo*



*The Thermax team at IFAT 2022*



## Cooling and heating portfolios presented at FoodPro Expo

Thermax participated in the 14<sup>th</sup> edition of FoodPro Expo, an exclusive event on food processing and technologies, held at Chennai Trade

Centre from 5<sup>th</sup> to 7<sup>th</sup> August. During the event, representatives from Thermax presented a diverse portfolio of cooling and heating solutions to over 200 customers from the F&B industry.

The visitors from various food and beverage processing companies enthusiastically explored all the products and services offered by Thermax that could meet the process and comfort cooling needs of the industry.



*Thermax representatives interact with customers at the FoodPro Expo*

## Refrigeration & HVAC Indonesia

Refrigeration & HVAC Indonesia 2022, an exclusive event on industrial refrigeration and climate control technology, was held at Jakarta International Expo (JIE expo) Convention Centre, Kemayoran from 21<sup>st</sup> to 23<sup>rd</sup> September.

Representatives from Thermax participated in this event and displayed a diverse portfolio of cooling and heating solutions catered specially for the predominant heat energy sources available in various plants/factories of Indonesia.

Individuals from different industries visited our stall and inquired about the various sustainable products and services offered by Thermax.



*Customer interaction at the expo*

## ISHRAE Chiller and Heat Pump Conclave



*Vaidyanathan K. S. conducts a seminar on energy-efficient cooling and heating solutions at the conclave*

Thermax participated in the ISHRAE Chiller and Heat Pump Conclave event in Pune on 20<sup>th</sup> August. Vaidyanathan K. S., Group Head - Proposals, Absorption Cooling, conducted a seminar on energy-efficient cooling and heating solutions.

The event was attended by industry peers, students, consultants, and speakers from all over India, who engaged with the speaker regarding the benefits of absorption technology to the environment.

## Water Conservation Conference

Water conservation and management is expected to take a more pronounced role in the sustainability metrics. Factors such as climate change will increase

pressure on natural water resources, especially in the industrial and agriculture sectors. To this end, Thermax Chemicals sponsored the Water Conservation Conference organised by Confederation of Indian Industry, Chennai, in collaboration with TN Manufacturing on 2<sup>nd</sup> September.

Mahendra Ponde, Head - Sales & Product Management, Performance Chemicals, presented a case study on water savings wherein 20+ kaizen ideas were shared by industry leaders.



*Ravi Varanasi (second from left), Global Commercial Head, Chemicals, along with the CII panel, presents the award to the winner for the best kaizen idea for the theme: 'Reduce, Recycle, Reuse and Regenerate'*



*Showcasing our green offerings to customers*



## Waste Technology Expo 2022

Thermax Babcock and Wilcox Energy Solutions (TBWES) participated in Waste Technology Expo 2022 held at India Expo Mart, Greater Noida, from 13<sup>th</sup> to 15<sup>th</sup> July, showcasing our green solutions in clean energy and clean air.

Our stall and technical conference held at Knowledge Park-II, Noida received an overwhelming response for our municipal solid waste fired waste to energy boilers, FlexiSource, Non-Recyclable Solid Waste (NRSW) and residual waste fired waste to energy boilers.

Thermax's presence and portfolio of solutions were noted by municipal commissioners and developers from various cities who visited our stall to learn how TBWES can help resolve their waste management challenges and offer environment-friendly solutions.

## CBG fosters its customer connect through industry-specific expos

With customers becoming much more social and accessible, Channel Business Group's plan of participating in association meets and exhibitions proved to be a resounding success.

With the main focus segment being rice and edible oil, CBG, along with Heating and Steam divisions, participated in the 12<sup>th</sup> Mookambika Rice & Grain tech expo in Patna, Bihar, held on 23<sup>rd</sup> and 25<sup>th</sup> September. The same had one on-the-spot booking and three purchase orders signed at our stall.

The CBG team also had the opportunity to promote the AquaeroTherm XT at a tea expo organised by the United Planter's Association of Southern India held at Coonoor, Nilgiri District, on 19<sup>th</sup> and 20<sup>th</sup> September. Apart from this, the team also participated in a rice expo organised by Tamil Nadu Rice Mill Owners Association at Kangeyam, Tirupur district, on 2<sup>nd</sup> July.

The Thermax booth and offerings were widely

*A glimpse from the 12<sup>th</sup> Mookambika Rice & Grain tech expo*



appreciated by the visitors and prospective customers. The participations not only helped to tap the relevant people in the industries but also resulted in generating a good pipeline of leads.



*The Thermax team at the UPASI tea expo*





## Service Engineer Conference 2022

After a period of two years, the Enviro division invited 60+ service engineers across regions to Pune for the Service Engineer Conference. The theme of the three-day conference was 'Service excellence', which included understanding changing market expectations and preparing for them. Over the course of these three days, we completed 1,600 training hours covering milestones of the customer service journey, such as customer connect, customer retention, and customer delight. Activity-based learning sessions were designed to exchange ideas through real-life experiences.



*B. C. Mahesh, Executive Vice President and Head - Industrial Product Business, addresses the Service Engineer Conference*

The first day of the training focussed on 'What are market expectations?' and Enviro customer requirements from the products and service team. On the following day, the participants deliberated on 'Where are we at the technical and site management levels?' and 'What improvements must we make in our day-to-day operations to achieve excellence?'

The last day was centred on how to prepare for future challenges and how we can be ready for the same through improving communication, team building, innovation, problem solving, idea generation etc.

The team also enjoyed a one-day trek to Andharban near Pune.



*Participants enjoyed a one-day trek to Andharban, Pune*

## Paper presentation at a conference by SOPEP

The Enviro division participated in a conference hosted by the Society of Power & Energy Professionals (SOPEP). The theme of the conference was 'Refurbishment and Modernisation of Plant and Machinery for Enhancing Sustainability in Business'.



*Rahul Golande (centre) recognised by SOPEP for his paper presentation*

A case study was presented by Rahul Golande, Head – Construction, Enviro, on how an integrated safety approach led to increased productivity during a refurbishment and modernisation project.

Thermax was appreciated for its emphasis on safety in the planning and execution of projects.

## International Palm Oil Conference

The Enviro team, along with its business partner in Colombia, participated in the International Palm Oil Conference hosted by The Colombian National Federation of Oil Palm Growers – Fedepalma and its Research Centre, Cenipalma, in Cartagena, Colombia.

During the conference, the team interacted with more than 30 palm oil mill owners, traders and producers in Latin America.



*Collaborative interactions at the International Palm Oil Conference*

# Diversity and Inclusion



## Spatters of Empowerment

Four women welders recruited at Shirwal's welding facility

The Welding Development Centre (WDC) at Thermax's Shirwal factory can seem usual in a day's routine; however, what will catch your attention here is the sight of four women diligently doing welding work at their respective booths.

The women empowerment initiative 'Hirkani' has brought a ray of hope in the lives of Kajal Chavan, Varsha Devkate, Pooja Ghadage and Pallavi Kumbhar, who were inducted as welding trainees at the WDC in April 2022.

Abid Inamdar, Factory Head, Shirwal, said, "Our main objective was to employ women candidates from underprivileged backgrounds and those who are in need of a job. The focus was to develop their skills with intensive training and gradually increase women participation in the factory. We deliberated on the areas of work in which they could be recruited and decided on hiring candidates in the welding facility of the plant. Parallely, the recruitment of women employees was done in all other departments such as

HR, welding staff, production, shop floor supervision, planning, housekeeping, gardening and canteen services."

Manohar Zanje, ER In-charge, Shirwal, collaborated with the adjacent villages to gather job applications. A senior member team, including plant in-charges - Nitin Changade, Narsinh Kulkarni, Manohar and Rhutuja Kumbhar, was formed to scrutinise the CVs and conduct interviews. "We received about 105 CVs, from which we shortlisted 32 candidates, and eventually, four of them joined," added Abid.

The welders were given intensive training of six months, equivalent to that of the ITI (Industrial Training Institute).

Narsinh, who was part of the curriculum designing team, said, "We took references from the ITI syllabus, and depending on the shop floor work, designed the curriculum. We first started with classroom training - taught them theory and then demonstrated the concurrent processes happening



Women welders attend the grinding safety training





*Women welders equipped with the PPE kit pose with the staff*

at the shop floor for a better understanding. We have given them the exposure of working at the shop floor as well. From the last two months, they have been delivering satisfactory results, even in critical tasks."

The trainees have successfully passed the ASME (American Society of Mechanical Engineers) certification exam, and are now preparing for the IBR (Indian Boiler Regulation) qualification.

Nitin Dhokale, Senior Engineer, Welding, said, "Initially, they needed some help with the language and understanding technical

terms, but gradually they coped with the syllabus and work. They have been given a hands-on experience, and the feedback has been very encouraging."

Laxmikant Kashid, welding trainer, informed, "They hesitated to ask questions in the beginning. So, we proactively helped them when they got stuck on any concept. They were also given regular assignments and tests to evaluate their learning progress, and they have fared well."

The team of welders are all geared up and will soon be deployed at the shop floor.

Talking about her experience, Varsha Devkate said, "Everything was new to us. We were scared of the sparks. But gradually, learning the different techniques gave us confidence, and we were able to perform the welding operations confidently. Our family members had safety concerns, but we persuaded them as all the safety protocols are diligently followed here."

Another welder, Pallavi Kumbhar commented, "At first, it was challenging to hold the welding gun, but once we got used to it, it did not seem difficult. We have also worked at the shop floor, and the staff here has been very supportive."

With this success story, the Employee Relations team looks forward to hiring more female candidates in the welding facility in the near future.



*Taking the shop round*



# Limelight



## Narendra Prajapati's novel makes it to the Asia Book of Records



Narendra Prajapati, Production Engineer, TBWES - Savli unit, recently released his debut novel - 'Lakshmi Naresh'. The novel, in Gujarati language, published by Nexus Stories, focusses on the story of a couple - Naresh and Lakshmi (who have been married since childhood) and their bitter-sweet relationship weaved in a series of events.

The story gives the message – 'Love is eternal and divine; we cannot value it with materialistic things'.

Narendra has been awarded the Asia Book of Records and India Book of Records certificates for participating in the record event – 'Maximum Number of Regional Authors' Books Published in a Single Day'.



## Dhyani Parmar grabs first spot in folk dance contest

It was a proud moment for Dhyani from class IX, Baroda High School - Alkapuri, daughter of Dhirenkumar Parmar from the Steam Engineering division, to win the first prize in the Gondhal group dance competition at the All India 7<sup>th</sup> Cultural National Dance Contest and Festival held in Jaipur, Rajasthan recently. She also bagged the first prize in the Indian folk dance category. The event was organised by Akhil Natrajam Aantar Sanskrutik Sangh - Nrutya Darpan, Nagpur.

14 year old Dhyani has completed four years of training in Kathak classical dance. Earlier too, she had received the first prize in Gondhal classical dance at Ujjain, Madhya Pradesh, in 2019. Congratulations to the young danseuse!



## Veerendra Rasela completes ultra marathon in record time

Veerendra Rasela from TBWES – EXIM completed his longest ultra marathon till date of 65 km with participants of team India (Comrade Run - South Africa) recently. The route was the toughest one in Pune (starting from Chandni Chowk to Ghotawade phata to Lavasa entry gate (a total of 8 km uphill) and returning to Ghotawade phata).

The participants who started at 12:00 am midnight had to face heavy rains and an elevation gain of almost 1,200 m. Veerendra completed the marathon in 08:41:13 hrs.

Earlier, Veerendra had also participated in the Apla Pune Marathon (of 42.195 km, completed in 04:55:31 hrs.) and the Mysamay Pune Marathon (of 42.197 km, completed in 04:27:30 hrs.) as a pacer for his friend.

Next, Veerendra will be participating in the prestigious Tata Mumbai Marathon, which is scheduled for January 2023.





# Signposts



## Self-Reflection: What is Self-Reflection? Why is Reflection Important? And how to Reflect

Self-reflection brings perspective to our lives. It helps us learn, grow, appreciate and understand. Here is a deeper dive into wisdom and beauty found in a meaningful reflection practice.

Socrates famously said, “The unexamined life is not worth living.”

And while this dictum is certainly true, self-reflection is not

necessarily an easy thing to practice. We live in an incredibly fast-paced world. Our mobile phones are constantly buzzing, social media is infinitely calling,

and Netflix always has something new to binge on.

Taking the time for reflection is a bit of a lost art. Most of

us, unfortunately, are living unexamined lives.

This shouldn't be the case. Few things are more valuable than self-reflection.

But what exactly is self-reflection? And what are some simple ways to practice it?

In this article, we're going to break down the what, why, and how of self-reflection.

Ready? Let's get started...

### **What Is Self-Reflection? A Self-Reflection Definition**

Simply put, self-reflection (also known as "personal reflection") is taking the time to think about, meditate on, evaluate, and give serious thought to your behaviors, thoughts, attitudes, motivations, and desires. It's the process of diving deep into your thoughts and emotions, and motivations and determining the great, "Why?" behind them.

Personal reflection allows you to analyze your life from

both a macro and micro level. At a macro level, you can evaluate the overall trajectory of your life. You can see where you're headed, determine whether you're happy with the direction, and make adjustments as necessary.

At a micro level, you can evaluate your responses to particular circumstances and events. Geil Browning, Ph.D., talks about personal reflection like this:

*"Reflection is a deeper form of learning that allows us to retain every aspect of any experience, be it personal or professional — why something took place, what the impact was, whether it should happen*





*again — as opposed to just remembering that it happened. It's about tapping into every aspect of the experience, clarifying our thinking, and honing in on what really matters to us."*

Practicing self-reflection takes discipline and intentionality. It requires pressing pause on the chaos of life and simply taking the time to think and ponder about your life, which is not an easy thing for many people to do. But it's an incredibly valuable practice.

### **The Importance of Self-Reflection**

Without self-reflection, we simply go through life without thinking, moving from one thing to the next without making time to evaluate whether things are actually going well. We don't pause to think. To analyze. To determine what is going well and what isn't working. The unfortunate result is that we often get stuck.

For example, a lack of personal reflection may lead us to stay in a job we don't like or a relationship that isn't going well.

A lack of reflection causes us to simply keep running, trying to keep up with things even if things aren't going well. We feel like we're simply trying to keep our heads above water. We end up doing the same things over and over again, even if those things

aren't producing the results we had hoped for.

### **The Benefits Of Self-Reflection**

Yes, taking time for self-reflection can be difficult. It can be challenging to take the necessary time to step back and reflect on what truly matters. Nevertheless, there are numerous wonderful benefits of self-reflection, and we should all make time for it.

#### **It Allows You To Gain Perspective**

Emotions can cloud your judgment, and you can lose sight of what truly matters. Some things seem bigger and worse than they truly are.

Self-reflection allows you to take a step back and gain perspective on what matters and what can be ignored. It allows you to process events and achieve clarity on them.

#### **It Helps You Respond More Effectively**

Most of the time, we simply react to whatever circumstances come our way. This can lead to us saying and doing things we regret. When we're in a reactive mode, we don't take the necessary time to consider our actions and words.

Personal reflection allows you to consider the consequences of your words and actions. It also

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**Self-reflection allows you to take a step back and gain perspective on what matters and what can be ignored. It allows you to process events and achieve clarity on them.**

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enables you to consider the best, most effective, most helpful way to act in a given situation.

### **It Promotes Learning and Understanding**

When we go through life without pausing to think and reflect, we don't learn or gain a deeper understanding of life. We simply move from one thing to the next, never pausing to consider what valuable lessons we might learn.

Self-reflection, on the other hand, enables us to evaluate and process what we've experienced. It allows us to think deeply and

ponder the meaning of our circumstances, emotions, and motivations. It enables us to live holistic, integrated, and healthy lives.

### Self-Assessment Sample

So how exactly do you perform self-reflection? How do you appropriately and helpfully reflect on yourself and your life?

One easy way to perform this self-reflection exercise is to use a journal (an online journal or print journal). Simply write out these questions and then take your time to thoughtfully answer them. Make sure that you don't rush. Pause and ponder. Think deeply about what truly matters to you.

First, determine the period of time you plan to look back on. Do you want to look back on the last week? Last month? Last year? Last five years?

Then, begin by taking stock of what actually happened during this period. If you already keep a journal, this step will be easier for you and perhaps a solid reminder of the value of keeping a journal.

Take a look through your planner, journal, and photos, and list out the highlights and lowlights.

#### Stuck? Here are a few tips:

- Did you travel anywhere this year?
- Experience any personal or family milestones?

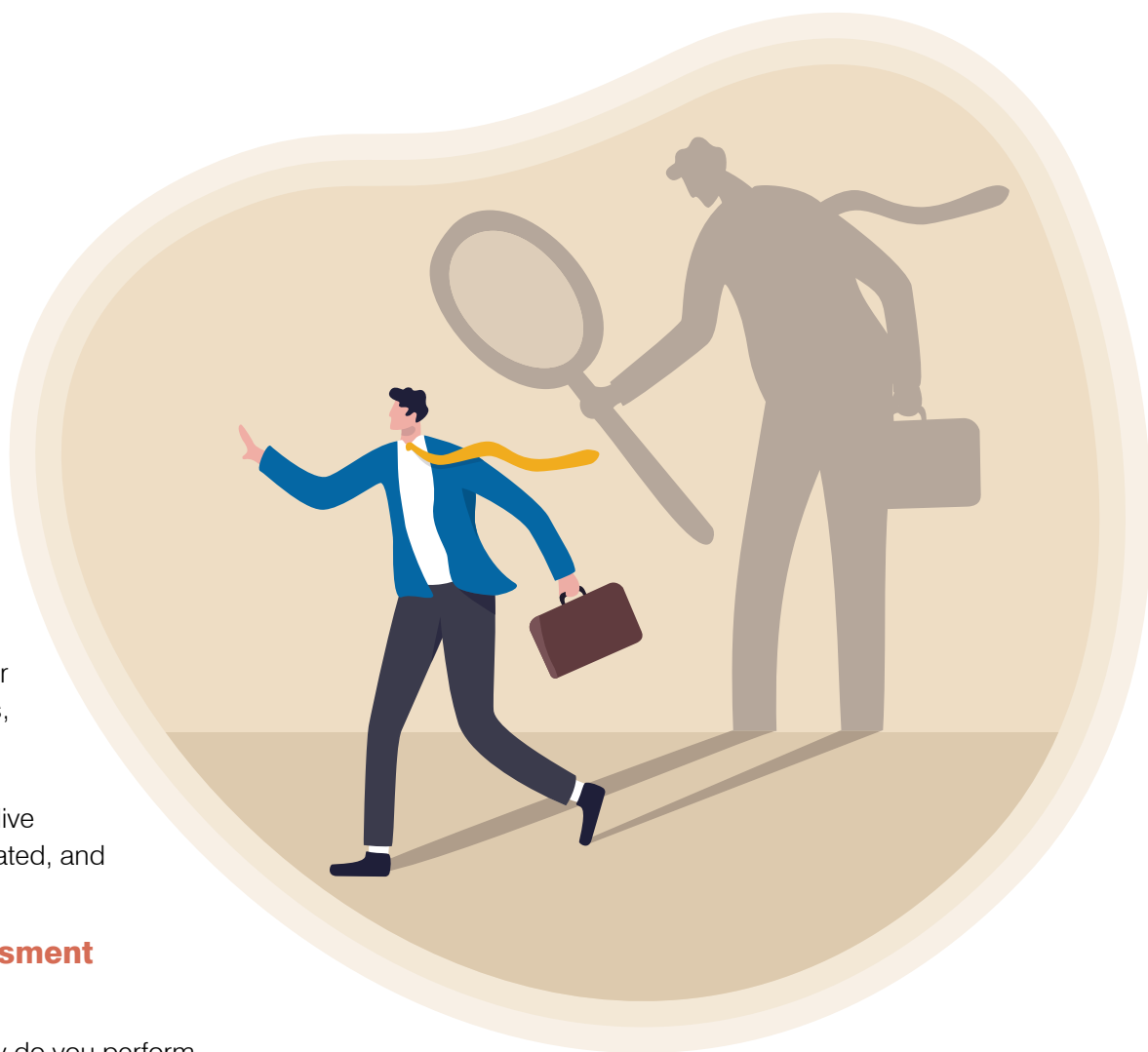
- What changed in your relationships, work, or passion projects?

Look back at your new list of highlights and lowlights and try to see if there are any patterns.

Do your highlights generally involve certain people in your life? Or any specific activities?

It can be difficult to revisit lowlights, but it is also a great way to find peace and growth.

For each lowlight, ask yourself: Was this within my control?





- **If yes**, ask yourself what you may do differently next time.
- **If no**, ask yourself how you may find peace with it.

Write down both the highlights and lowlights in your journal, then take time to reflect. What things do you want to accomplish over the next month, year, and five years? What do you want to change about your life? What things can you improve on?

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Self-reflection questions are powerful tools you can wield to inspire and empower you to discover your own inner truth.

Still, it's often hard to know where to start. Be gentle with yourself.

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Taking the time to walk through this exercise will help bring clarity and perspective to your life.

### A Guided Self-Assessment

Looking back at your chosen time period, rate yourself on a scale of -5 to +5 on each of the following six areas of your life.

After selecting a number, write what made you feel that way. Expressing the emotions and feelings that you have, is a great way to have a deeper and more meaningful reflection.

- **Mind** - Do you feel clear-headed, engaged, and intellectually challenged?
- **Body** - Does your body feel healthy, nourished, and strong?
- **Soul** - Do you feel at peace and connected to the world around you?
- **Work** - Do you feel interested in and fulfilled by your work?
- **Play** - Do you feel joyful? Are you engaging in activities that bring you joy?
- **Love** - Do you feel positive about the relationships in your life?

Don't rush through this self-assessment. Take the necessary time to reflect on each area of your

life. If you rush, you'll miss out on the value of self-reflection.

### Self-Reflection Questions to Ask Yourself (What Are Good Questions for Self-Reflection?)

Self-reflection questions are powerful tools you can wield to inspire and empower you to discover your own inner truth.

Still, it's often hard to know where to start.

Be gentle with yourself.

Question-asking is a skill to develop like anything else, and that takes time and practice.

But the more questions you ask, the easier it will get.

Here are some questions for self-reflection to get you started:

*If you could change anything about your childhood, what would it be?*

*What is something creative you did when you were younger that you no longer do? Why don't you do it anymore?*

*What's your superpower?*

*What types of things have you collected in the past?*

Use these questions as a starting point to come up with your own.

You know yourself best, and your best self-reflection questions are just under the surface, waiting for you to ask them.

### **When Should You Practice Self-Reflection?**

There are a number of times when self-reflection is

particularly helpful. First, it can be useful to do it for a few minutes each week. You don't have to go through all of the questions or take hours to do it. Focus on what has been on your mind that particular week.

It can also be helpful to practice self-reflection as an end of month personal review and end of year personal review.

In other words, at the end of each month and year, do an in-depth personal review of your life. Look back over the previous days and months and analyze your life. This practice will provide you with a helpful perspective and ensure that you are living life to the fullest.

### **Don't Live The Unexamined Life**

When we fail to reflect on our lives, we lose perspective, get caught up in things that don't matter, and often lose sight of the things that are most important. Socrates was right when he said that the unexamined life isn't worth living.

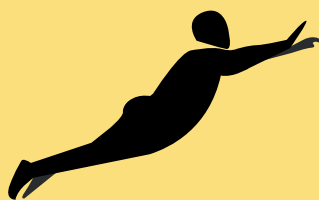
Don't live an unexamined life. Practice self-reflection today.

*Source: <https://www.holstee.com/>*





# Voices



## First Mile: Taking a leap into the professional world

Two young recruits share their experience on joining Thermax and how the company is shaping them to become rounded professionals.

### When dreams come true!

The first job experience is always special and memorable. There are feelings of exhilaration coupled with anxiousness. I knew there were going to be moments filled with 'I am not sure how to do this.' Then I came across a beautiful quote by Marissa Mayer - "I always did something I was a little not ready to do. I think that's how you grow." This is my recollection of how I became a part of Thermax.

As a part of the college curriculum, each student had to go through industrial training. I was grateful, excited but also apprehensive when I got the opportunity to undergo the same at a reputed organisation like Thermax. It was the start of something new. Despite only spending a couple of months here in Pune, I felt it was worthwhile.

I joined Thermax as an intern in the Innovation department of Water and Waste Solutions. This was my first encounter with the corporate world. As a post-graduate in Environmental Science, I studied various subjects, including solid waste management, air pollution control, water treatment, remote sensing, and others. However, I have always had an inclination towards water and wastewater treatment. From lab experiments to designing, I wanted to learn more about this subject. The WWS internship allowed me to explore my interest in water and wastewater treatment. Every day here felt like a new learning experience.

During the course of my internship, I was a part of multiple projects, which helped me in enhancing

my theoretical as well as practical knowledge of the subject. I gained first-hand experience in projects like membrane autopsy, analytical experiments, jar tests and pilot-scale studies. Furthermore, I had the opportunity to put my boots on the ground and participate in technical audits. This insightful experience allowed me to understand how projects work. As we conducted numerous experiments, sometimes we got accurate results, sometimes inconclusive results, but it felt that every time I was adding to my knowledge base. Throughout my internship, I received exemplary guidance from my mentor and constant support, and friendly advice from my colleagues. I am still filled with a deep sense of gratitude as I recall the time of my internship.

All my life, I have lived in North India. I had never ventured this far, so my parents were a little concerned about me living 1,800 kilometre away from home. I was riddled with various anxieties as well. But my colleagues and friends made Pune feel like a home away from home. By the end of my internship, I felt like it had come to an end too soon. I left for home with countless memories and a hope to visit Pune once again, not knowing that the chance to be back would come so early.

Fortunately, I also had the opportunity to start my career at Thermax. I joined Thermax as Associate Proposals in WWS - SPG (Standard Product Group) on 28<sup>th</sup> September 2022. Moving from Innovation to SPG Proposals has allowed me to gain a deeper understanding of the different

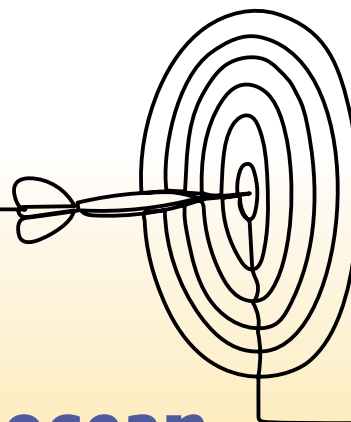
aspects of jobs associated with water and wastewater treatment. At present, I feel like the new kid on the block. Currently, I am learning the ropes of the job. I believe a structured learning process in a growth-oriented environment, as provided in Thermax, will allow me to gain substantial knowledge, add value to my deliverables and allow me to shape my career well.

As I work with people from diverse knowledge backgrounds in a collaborative, employee-friendly environment, I hope to evolve and develop my technical as

well as interpersonal skills and grow as a conscientious, diligent professional. Here's hoping that the next time when I write an article, I can describe vividly how I have grown both as an individual and a professional.



**Richa Kapila,**  
Associate - Proposals,  
Water and Waste Solutions



## Thermax: An ocean of opportunities

Thermax is a vast reserve of knowledge and opportunities; one just needs to dive into it to explore.

An individual always wants to start a career with an organisation that will allow him/her to learn and grow. I joined Thermax as a GET (Graduate Engineer Trainee) in the Detail Engineering Department of WWS - SPG on 1<sup>st</sup> September 2021.

Writing about my experiences with the company over the past year gives me immense pleasure in reflecting on how much I've explored and learned in such a short duration. Coming from the Instrumentation and Control Engineering Department, the company provided me with many opportunities to work in different domains, right from core detail engineering to PLC programming and most interestingly,

the IoT-enabled Thermax Edge Live platform.

My journey began with a very informative induction programme - 'Aarambh', in which we went through various series of curricula; we learned about company policies and interacted with dignitaries from Thermax's businesses and departments, which gave us an



overview of the company's business. Right after the induction programme, I was sent to explore different sites in the western region. It was a very valuable one month in my engineering career as I got to see live sites, witness difficulties first-hand, and learn how to resolve them.

Over the last one year, I could visit different customer sites from various industries, including pharma and F&B, which provided insights into our systems such as the water treatment plant (WTP), effluent recycle plant (ERP)/effluent recycle system (ERS), incinerator and mechanical vapour recompression (MVR) system. I was one of the few ones to experience the live plant, and it was a great learning experience.

The most incredible thing about the company is its working culture and the freedom to work on tasks independently. The company showed a lot of trust in me even during my GET period, and I have been able to work on more than 25 projects so far.

Apart from all this, I am working on the company's new digital revolution - 'Thermax Edge Live'. The company's fully packaged solution allows customers to not only monitor their plants remotely but also receive alerts about anomalies and future predictions, helping them avert failures. It's been a roller coaster ride full of fun and very engaging work. Currently, I am assisting my team in developing the customer interfaces as well as onboarding sites. As part of the development process of the algorithm, I have engaged in a lot of brainstorming and collaborative work, which not only helped me gain knowledge about different aspects other than my core work, but also helped me build a network.

Recently, I was given the opportunity to represent Thermax at IFAT Mumbai 2022, India's leading trade expo for waste, sewage, and raw material management. I was an exhibitor there for all three days, which was a lifetime experience for me. Being a GET

and representing Thermax on such a big platform was not only a proud moment for me but also gave me a lot of exposure. We interacted with many dignitaries and industry experts, and the response was overwhelming.

It's been an exhilarating journey so far, and I look forward to a great year ahead. With so many opportunities coming my way, I wish to be a valuable asset to the company in the near future.



**Rishi Hiran,**  
E&I Engineer,  
Water and Waste Solutions



# Slice of Life

## From trash to treasure

They say one man's trash is another's treasure, and that couldn't be more true in Sacks's case. Working at an investment bank in New York City in the mid-2010s, Anna Sacks was living the life – just not the life she wanted. She wanted to do something that felt important and was fulfilling on a deeper level.

Sacks packed up her life and moved to Connecticut for three months to participate in Adamah, a Jewish farming programme that focusses on sustainable living and growing sustainable food. "One of the things that really stuck with me from Adamah, which means 'Earth' in Hebrew, was how little waste they produced and how they handled the waste they did have, primarily through composting," she says. "And I just thought, 'Why aren't we doing that here?' I'd walk around my neighbourhood and was shocked at how many bags of waste were piled up. I began to wonder, 'What is actually in all those bags and recycling bins?'"

She began what she calls 'trash walking.' During jaunts around her neighbourhood, Sacks, 31, picks through garbage to look for reusable items.

Trash walking has given Sacks a nearly endless supply of clothing, food, appliances, dishes, glassware, flatware, books, picture frames, candles, and artwork. Some she keeps for herself, but at this point, her own home is pretty well stocked, so she focusses on distributing much of her hauls to others. First, she tries giving them informally to family, friends, or individuals she knows may need a specific item. Then she takes the remaining items to shelters or free stores so other New Yorkers can benefit from her treasure-hunting. Sometimes, she drops off shelf-stable goods at community fridges, which allow anyone to take food for free.

Sacks's main focus is simply getting people to pay attention to how many unnecessary things they buy and then throw away. "Once you become conscious of the way you consume, you can see ways you improve," she says.

Source: Reader's Digest



## The psychology of colours in football

It goes without saying that it's important for the ball to be visible during the match – not only for the players, but for spectators too. The iconic black and white football design first came about for the 1970 World Cup in Mexico. Adidas developed the Telstar ball so it could be seen more clearly on black and white televisions with its patterned exterior.

This classic design has continued through to the age of colour television. Footballs now often have flashes of colour but still vividly stand out on our TV screens.

Source: <https://www.valsparpaint.co.uk>

## And this clever joke!

It's hard to explain puns to kleptomaniacs. They always take things literally.



Source: Reader's Digest



# Celebrating responsibly



## 'Dil' se Dil tak

On 13<sup>th</sup> September, The Thermax House Cafeteria was all prepped up to welcome the baristas from Café Dil. As an effort to promote inclusion, Thermax's Administration team chose chefs from Café Dil to sell tea time snacks to Thermax employees. The event was held in partnership with Team Prayatna, an NGO in Pune. Over the past 30 years, the team has been continuously and painstakingly training students with various degrees of mental disabilities. They aim to help these students learn and perform their basic routines as independently as possible. Café Dil is one such effort to facilitate their livelihood.

Employees from The Thermax House and Sai Chambers visited the stall, and bought the delicacies, encouraging the young chefs.

It was a heart-warming experience to welcome the children and adults from Prayatna and contribute to their happiness.

The food stall set up by Café Dil



The young chefs from NGO Prayatna with the Thermax team



## Diwali mela @ Thermax offices

On the occasion of Diwali, Thermax offices in Delhi, Pune, Chennai and Kolkata hosted Diwali melas with stalls from various NGOs. The artefacts on display included plastic recycled products, wooden toys, diyas, candles, handicrafts, Diwali sweets, jams, jellies and preserves.

The employees participated in this CSR initiative by purchasing their favourite items and making contributions to the fair.



Delhi

Kolkata



Pune



Chennai



# Festive fervour grips Thermaxians

It was a time for celebrations and fun! After two years of the Covid pandemic, this year all the Thermax employees could get together and revel in the festive spirit of Dussehra and Diwali!

The offices across locations were decorated to celebrate the festivities, while the employees, in their traditional best, exuded happiness and bonhomie.

A *dandiya raas* ushered in Dussehra celebrations, while sweets and lights marked Diwali.

Savli



## Dussehra celebrations

Energy House, Chinchwad



Thermax House, Pune

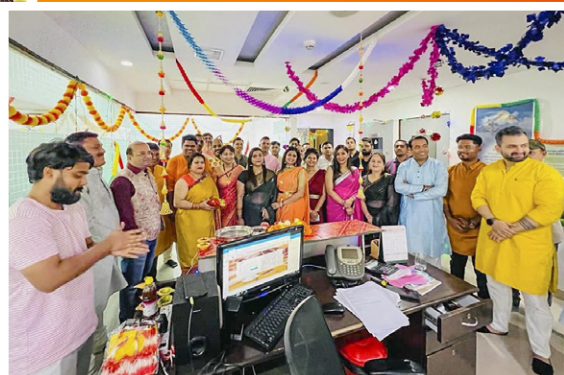


## Diwali celebrations

Savli



Sai Chambers, Pune



Delhi office