

CHYE THIAM MAINTENANCE

Chye Thiam cleans up with tech

What began as a grass-cutting and cleaning contract company started by two former farmers has grown into a big operator run by a new generation and using high-tech solutions like ozone water and robotic scrubbers.

CHYE Thiam Maintenance has come a long way from its first modest grass-cutting and cleaning contract in 1979, with its projects today more likely to feature ozone water and robotic scrubbers.

The environmental services firm was started by Tan Chye Thiam and his wife, both former farmers, in a shophouse unit in Hougang. It has since moved several times, most recently in May 2018, with its new building in Tampines boasting a built-up area of 57,000 square feet.

Chief executive officer Edy Tan, one of the founders' four children, sums up the firm's journey: "From two of them singlehandedly handling projects that were maybe worth a few hundred dollars a month, to now having a big team of close to 1,500 staff, handling an annual turnover of about S\$80 million."

Mr Tan recalls how, as a child, he used to follow his parents to the chalets and parks which they were responsible for cleaning. In 2012, after returning from further studies in the United Kingdom, he formally joined the business.

At the time, Chye Thiam had "a couple of hundred staff" and an annual turnover of perhaps S\$10 million, Mr Tan estimates. But when he and other young guns came on board around the same time, they wanted to take the firm further.

"The older generation's mindset is that they do not want to be exposed, they don't want to be recognised so much. They just want to do their normal job, get their margins, get their pay, that's about it," he says. "But when the new team came in, we wanted to be different. That's why we secured many iconic projects."

Chye Thiam made a point of landing the first contracts for newly-built, attention-grabbing projects, from the Esplanade in 2002 to major malls such as Ion and Vivocity.

This ambition remains undiminished, with one of

the firm's latest coups being the contract for Jewel Changi Airport.

Two large jobs were also landed in recent years: Integrated Public Cleaning contracts for Singapore's expressways, awarded in 2014, and the north-east region, awarded the next year.

POLISHING UP ROUGH IDEAS

The firm's capabilities have expanded along with its business. Says Mr Tan: "From a very manual kind of industry, we have evolved."

From the mid-1990s, the firm began investing heavily in machinery, prompted in part by their securing of contracts for Changi Airport's exterior and aircraft parking areas. As Mr Tan puts it: "It's a huge space, we can't possibly find the manpower to do it (manually)."

Before purchasing equipment, the team would first go abroad to observe it in use. This cautious approach has endured, now complemented by innovation: "We don't just invest and buy anything in the market. We analyse, we study, and we even make improvements through our own collaborations with some of our partners."

These technology partners include firms with expertise in information technology or engineering. "We share with them, from our operations perspective, how that machine or system can be further enhanced, and we work very closely together to fine-tune it."

Some collaborations go beyond fine-tuning. Chye Thiam once considered a vacuum excavator from Italy, which cost almost S\$1 million. "Due to its size, due to its value, it might not necessarily be compatible or applicable in Singapore, where it is very urban," says Mr Tan. It would have been hard for the hulking machine to traverse smaller city streets.

The firm took the idea to its engineering partners and developed a cheaper version instead, which is smaller and suited for urban use.

Nor does Chye Thiam believe in technology for technology's sake. If a solution is not working out, the firm is prepared to drop it.

Around 2013 or 2014, many suppliers of robotic scrubbers were pushing their products. Chye Thiam took on one such machine and trialled it within an existing project.

However, the technology was still raw. The robot was unable to recognise glass panels – running straight into them – or to react swiftly to obstacles. After a month, Chye Thiam told their client the robot was proving more a problem than a solution, and said they would find an alternative.

Trying out new technology, even midway through a project, is Chye Thiam's signature approach.

"Our clients want to see new ideas," says Mr Tan. "Even after we start a contract, that doesn't stop us from exploring new ideas as well."

In an industry where cost remains a major aspect

Chief executive officer Edy Tan, one of the founders' four children, says: "We don't just invest and buy anything in the market. We analyse, we study, and we even make improvements through our own collaborations with some of our partners."

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of competition, Chye Thiam aims to add value to its offerings by bringing “something new and fresh” to clients – and hopefully securing a fresh contract term as well.

One innovation which Chye Thiam recently brought in is a camera-equipped vacuum cleaner on a lightweight 5-metre-long pole. This has made high-rise indoor cleaning a one-man show, in contrast to previous methods – using equipment such as ladders or scissor lifts – which required three workers.

In 2016, the firm also invested in a machine that can produce ozone water, “instead of buying bottles and bottles off the shelf”. The water’s chemical properties make it an effective disinfectant, allowing Chye Thiam to reduce the use of harmful chemicals and cut down cleaning frequency.

Mr Tan credits Chye Thiam’s combination of old and new – its established track record and openness to novel technology – with helping it secure contracts such as the one for Jewel, which begins in October 2018.

Chye Thiam is also exploring cutting-edge ideas, leading up to a trade show later this year where it will present “a different breed of robotics”.

Cleaning robots usually work solo. But about two years ago, the company began conducting trials in which one space contains multiple robots that can communicate with each other regarding which areas have been cleaned. This technology will be rolled out at Jewel.

Separately, Chye Thiam has been working with technology partners to come up with autonomous scrubbers for the airport’s aircraft parking area, to reduce manpower needs to a third of the current number. A prototype is expected by the end of 2018.

GOING PLACES

Not all innovations involve digital technology; some just require a good idea. Early in 2018, Chye Thiam introduced its mobile dishwasher: an industrial dishwasher built into a truck.

There are two prevailing approaches on the market, Mr Tan observes: washing dishes manually on the spot, or sending them to a centralised, automated cleaning facility.

Their mobile dishwasher combines the best of both approaches, allowing for quick cleaning without a need to transport the dishes. Chye Thiam envisions it being used to support large events, no matter how remote the location.

The truck contains a generator and water tanks for both clean and soiled water, allowing the operation to be self-sustaining for up to three hours. Furthermore, driving the vehicle pre-heats the water, so less energy is needed to get the water up to the required temperature for cleaning.

A movable platform at the side of the truck can lift trolleys from ground level to the truck interior. Crockery can then be loaded onto the racks on the dishwasher’s conveyor belt. Once the machine detects the presence of items, it starts washing them.

The mobile dishwasher requires just two crew – a driver and an assistant – and can clean 70 to 100 loaded trays of crockery each hour.

“We intend to push it out widely,” says Mr Tan. The vehicle is likely to be used, for instance, at 2018’s Formula One event, for which Chye Thiam has been providing services since 2008. The plan is to offer the mobile dishwasher as a service in the first instance but also sell such trucks if there is demand.

Another recent effort is Chye Thiam’s material recovery facility, which started operations at the end of 2017. In contrast to the widespread use of manual waste sorting in the industry, Chye Thiam’s new facility, which cost almost S\$2 million, has a conveyor belt with semi-automated sorting and can handle 100 tonnes of waste a day.

Chye Thiam’s new building also houses its command centre and features live video feeds from its sweeper machines, a fleet management system, and location-specific feedback alerts showing how much time has elapsed since the feedback was received.

As a member of the Environmental Management Association of Singapore’s executive council, Mr Tan is well aware that the industry as a whole needs to transform.

“Manpower is still the main concern,” he says. With more infrastructure being built in the coming years, an estimated 20,000 to 30,000 more cleaners will be needed.

“We will not be able to get these numbers,” he says. Firms must thus continue to attract and retain local workers, while also improving their processes with the use of machinery and technology.

To this end, apart from working with industry partners to innovate, Chye Thiam is collaborating with sources of future talent: educational institutions such as polytechnics, Institute of Technical Education colleges and universities.

Mr Tan says: “We need their expertise. At the same time, they need us to apply what they learn in the real world.”



Learning and growing with the firm

ONE episode from Lim Jo Hann’s earliest days with Chye Thiam Maintenance still stays with him today.

Mr Lim joined the firm in 2002, fresh out of National Service, and was assigned as a project executive at Changi Airport. One day, while driving around the airside area, a senior colleague said to him: “Look at all these vehicles.”

The vehicles around them – and some 300 workers – were under his charge. That, said the older colleague, was what success looked like.

Mr Lim, 39, is now senior vice-president for operations at Chye Thiam, which has 1,500 staff.

Apart from the Changi Airport project, Mr Lim worked on the start-up of cleaning and maintenance services at the Esplanade, after Chye Thiam clinched the first contract for the then-newly-built performing arts centre.

By 2003, he was overseeing his own projects: starting small with a six-person team for the airport police division, then handling the Chinese Swimming Club.

Back then, there were “a lot of things you had to do yourself” – from payroll to stock deliveries. The firm had just three administrative staff at the time.

Chye Thiam has come far since then, but neither the firm nor Mr Lim has stayed complacent. “What always drives us is having something new,” he says.

There were always new projects to spearhead, with Chye Thiam having a knack for securing the first contract for iconic projects – such as Orchard Road’s Ion mall and Resorts World Sentosa – upon their completion.

Another example is the Formula One Grand Prix,

with 2018 being the 11th time that Chye Thiam is providing services for the event.

“When F1 first came to Singapore, nobody knew how to do a mega-scale project,” Mr Lim recalls. So he flew to Australia to see how the Grand Prix there was handled.

Some journeys with Chye Thiam are less dramatic, but still driven by new learning opportunities.

When Joreen Ong joined in 2005, her reason was simple: “I needed the timing.” The 5am to 1pm shift, cleaning aircraft interiors, allowed her to care for her children, who were then in kindergarten and Primary 1.

In 2007, there was a vacancy in the training team, and she thought of giving it a try. But as she recalls: “At the beginning, trying was not so easy.”

She had no background in the cleaning industry, and had to read materials and take tests in English despite being Chinese-educated.

As a senior trainer today, the 55-year-old helps others overcome such challenges.

Chye Thiam’s constant drive for improvement has made this easier too. Previously, assessors from the Singapore Workforce Development Agency – now Workforce Singapore – would come by to assess their training, putting pressure on the trainees, as well as the trainers.

“They were also shaking, saying ‘I don’t want to take the test, I’m scared,’” Ms Ong says of the elderly trainees under her charge.

Chye Thiam has since become a certified training centre. Without external assessors, trainees feel more at ease, says Ms Ong: “They’re more comfortable now.”

Senior trainer Joreen Ong and senior vice-president for operations Lim Jo Hann with the company’s new mobile dishwasher – an industrial dishwasher built into a truck that can clean 70 to 100 loaded trays of crockery an hour. The plan is to deploy the vehicle at 2018’s Formula One event, for which Chye Thiam has been providing services since 2008.

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