

A hand is shown from the right side, reaching down to touch the surface of clear, rippling water. The hand's reflection is visible in the water below. The background is a soft-focus view of the water. A large teal graphic shape is on the left, with a yellow shape partially visible at the top left corner.

On your side.

From uncertainty to predictable outcomes.

Kubota

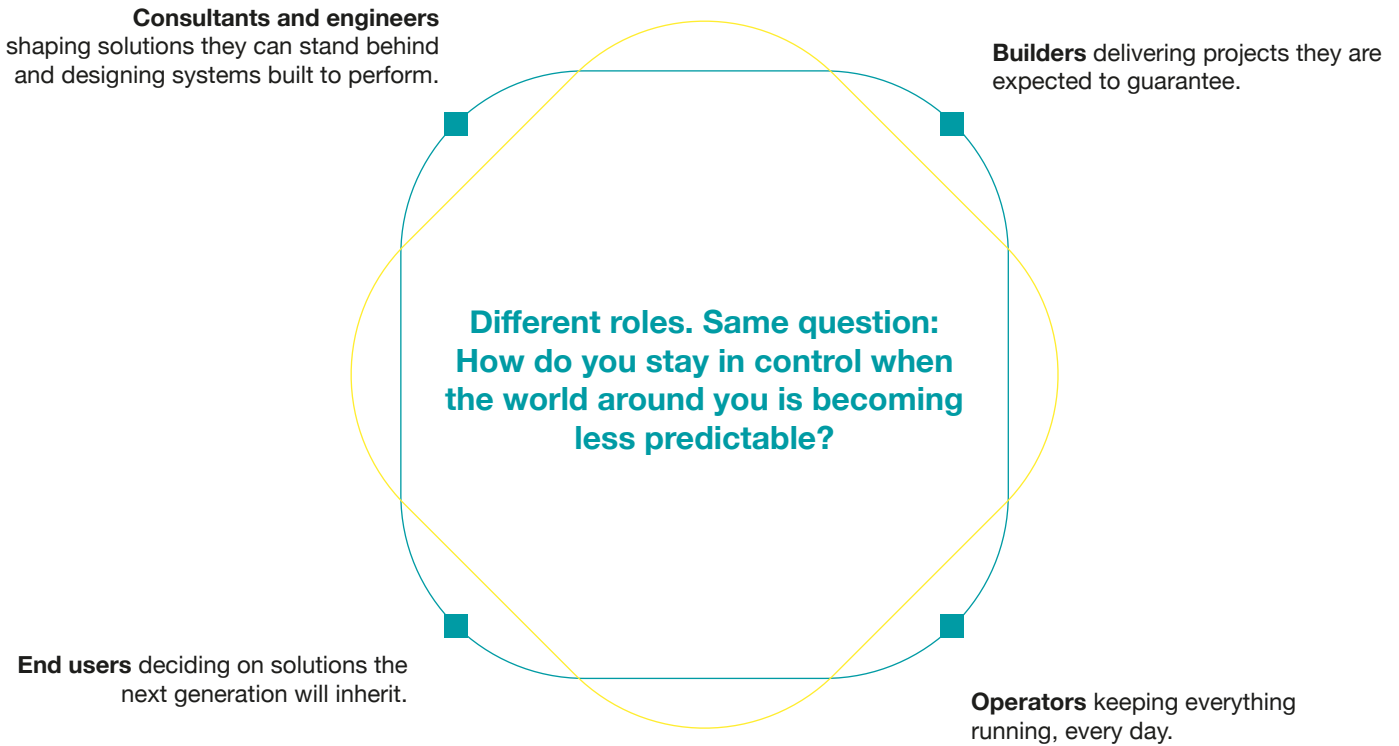


On your side.

Water has always been uncertain.
Sometimes too scarce.
Sometimes too abundant.
Sometimes too contaminated to be safe.
Always too valuable to lose.



What changes is the pressure around it, and the **people** responsible for managing it.



That is **where** Kubota comes in.

We are on your side when that question matters most, with **proven technologies**, **process knowledge** built over decades, and **support** that continues through commissioning and beyond.

We focus on where we can genuinely make a difference and where our solutions are technically backed. Because honesty is where every long-term partnership begins.

On your side.
From uncertainty to predictable outcomes.

The **solutions** partner.

**Water and environmental systems are always under pressure.
The variables change. The pressure does not.**

Water can be scarce or excessive. Contamination can become a compliance risk. Waste streams can hold recoverable value. A pipeline has to keep supply moving. A membrane has to perform and stand up to growing scrutiny around material selection and regulation.

For engineers, consultants, EPCs, and operators, the challenge is not simply choosing a product. It is making reliable decisions when the conditions around them keep changing.

Our answer is a **solutions partner approach**: process expertise, proven references, and specification-ready support that turns uncertainty into predictable outcomes.

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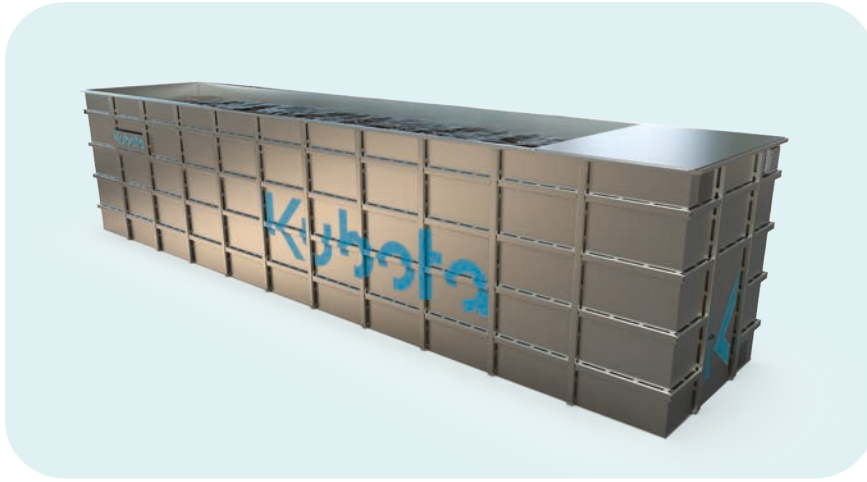
I was convinced that anything could be done with a little effort. Enthusiasm is a powerful concept, and indeed, working nonstop to achieve something can really make it happen.

Gonshiro Kubota, founder

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On your side, when every **drop** counts.

Submerged Membrane Units for MBR / MBT / AnMBR applications - SMU®

When water is scarce, every cubic metre that cannot be recovered is a cost: operational, environmental, and commercial. Treatment has to do more than just meet discharge limits.

It has to **help recover usable water with consistency and confidence**. Treatment systems face growing pressure on footprint, energy consumption, maintenance burden, and effluent quality. And, increasingly, membrane selection has become a material question as much as a performance one.

When treatment systems underperform, consequences compound:

- Inconsistent effluent quality puts reuse targets at risk.
- Membrane technologies that require isolated tanks, complex cleaning procedures, or frequent shutdowns add operational uncertainty at every stage.
- Material choices that carry regulatory risk create compliance exposure that is difficult to reverse once the system is in operation.

OUR RESPONSE

Kubota's SMU® are **designed to perform where pressure is highest**.

Robustness, easy-maintenance, +35y of experience are the core added values of our SMU®.

Installed directly in the aeration tank, they eliminate the technical need for isolated membrane tanks and help reduce total footprint, civil work, and pipeline complexity. Their **rigid plate structure** maintains fixed distances between elements, preventing tangling with fibrous material and supporting stable operation at high MLSS levels, reaching up to 20,000 mg/L in several models for MBR applications.

Our SP SMU® Units are fully liftable for maintenance without emptying the tank, require **no backwash** and support in-situ chemical cleaning (CIP) **without any sort of recovery cleaning**, simplifying **O&M without process interruption**.

The membrane material is **CPVC, not categorised as PFAS by the European Union**, providing a technically sound answer to the growing scrutiny around membrane material selection.

THE OUTCOME

The result is consistent, high-quality effluent, stable enough to support water reuse, predictable enough to plan around.

Virus and bacteria removal rates meet or even exceed ultrafiltration standards, with verified log removal values for Giardia (5.64 LRV) and Cryptosporidium (3.55 LRV).

- **Pioneer of the MBR technology**, from the end of the '80s.
- **Over 7,000 installations** worldwide in municipal and industrial sector.
- Verified references, from small to large, with **>10 years of lifetime, without replacements**.
- Verified performance at **13, 15, 20, 45 g/L MLSS**, depending on applications.
- Technical documentation, reference cases, and specification-ready support available across the project lifecycle.

On your side, when you need **reliable** treatment, fast.

MBR Package Plants

Civil plants take years to build, and isolated or temporary sites cannot wait for heavy infrastructures to be completed. When space is limited, schedules are tight, and too many parties are involved, the risk is a project that becomes slower, more complex, and harder to deliver than planned.

Uncertainty is familiar to anyone who has delivered a treatment project under pressure. Interface risk, installation complexity, start-up delays, and the question of whether the system will reliably meet its treatment targets once on site. And when things slip, consequences are concrete: environmental penalties, production shutdowns, and delayed commissioning.

OUR RESPONSE

Kubota's combined design MBR package plants are pre-engineered, prewired, plumbed and tested before leaving the factory: our decades of experience in the MBR sector at your service.

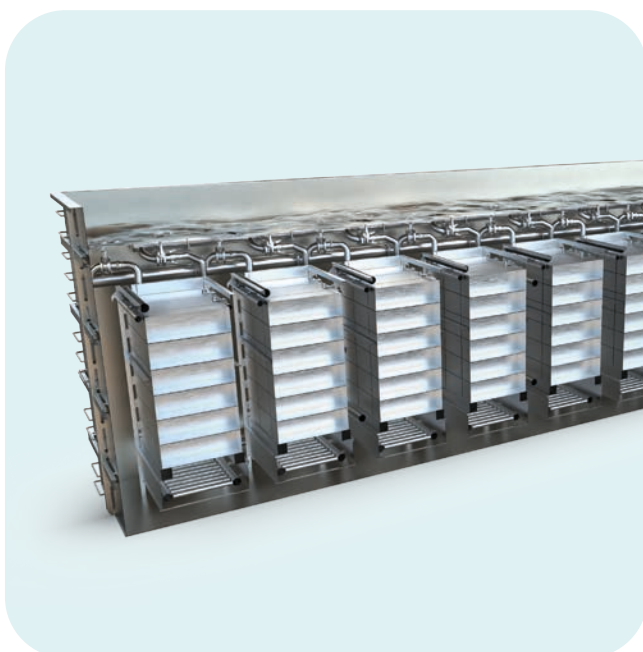
A complete, all-in-one treatment package from a single supplier, built around robust proven flat sheet membrane technology with rigid plates, designed to simplify installation, reduce interface complexity, and accelerate start-up.

Our systems handle flows **from approx. 38 to approx. 380 m³** per day and achieve total nitrogen limits below 5 mg/L.

THE OUTCOME

Installation time is reduced by 70%, with guaranteed effluent quality from day one. Because the membrane tank is part of the biological reactor, **the same air that scours the membranes drives the treatment process**: less volume, less energy, less to go wrong.

- Kubota's package plant experience started decades ago with Johkasou wastewater treatment plant in Japan. Today, thousands of installations operate across the world, from remote resorts to municipal networks, delivering reliable treatment where building conventional infrastructure was never an option.

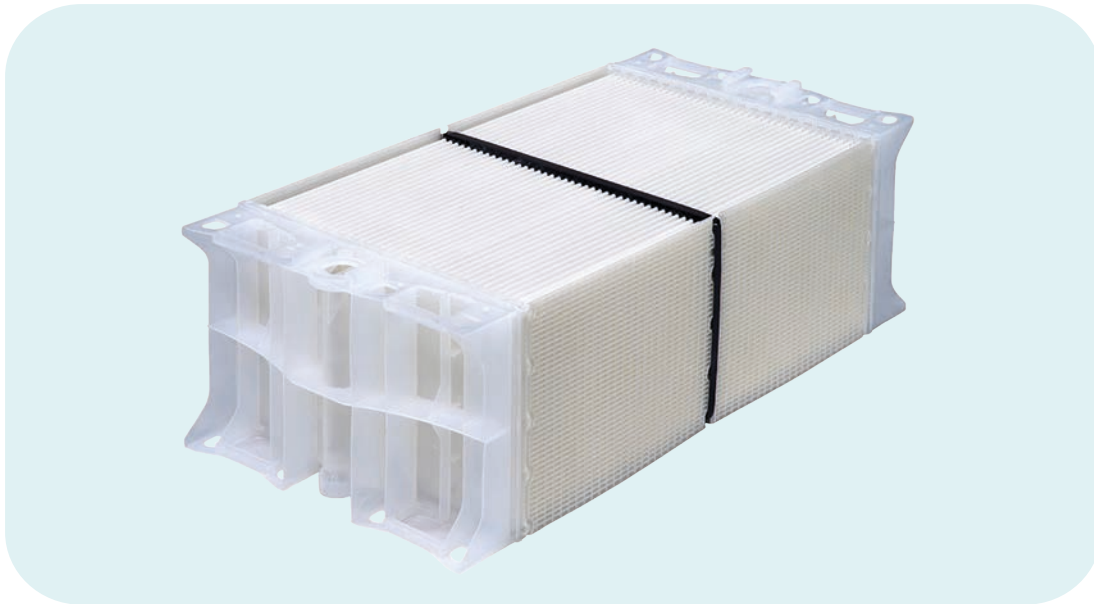


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First, we must be beside ourselves and dive into the work at hand. If we can go about our work with enthusiasm and enjoyment, difficulties will disappear, and work itself will become more compelling.

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Gonshiro Kubota



On your side, when membrane selection becomes a **PFAS discussion**.

NON-PFAS Membrane Sheets

Membrane selection has always been a performance decision. Increasingly, it has become a material one. Scrutiny around PFAS is growing across markets, and PVDF (the polymer used in many membrane technologies) is now part of the issue.

For utilities, EPCs and consultants, the concern is practical: **investing in assets with a 20-year horizon means today's material choice could become tomorrow's compliance or procurement problem.**

Regulatory frameworks around PFAS are evolving at different speeds, but the direction is consistent across markets. Membrane installations specified today will still be operating when those frameworks tighten further, and the uncertainty is not only technical: it is whether a material choice made under current standards will remain compliant as those standards change.

OUR RESPONSE

Kubota's flat sheet membranes are manufactured from **CPVC, a polymer material that does not fall under PFAS classifications according to EU regulations**. This is not a future roadmap item. It is the current material we use across our installed base, supported by technical compliance statements.

THE OUTCOME

Kubota can **guarantee compliance of its membrane polymer type across the entire lifecycle**, regardless of how PFAS restrictions evolve. Confidence in the membrane performance and composition.

- Technical compliance statements confirm the absence of restricted substances in the type of polymer used for the membrane. Available upon request.

On your side, when **excess water** threatens our lives.

Mobile-Ultralight Drainage Pump

When excess water strikes, fixed infrastructure is often the first asset to fail. Pumping stations designed for steady-state conditions struggle with sudden peaks: heavy emergency equipment takes time to mobilise, and in narrow streets, difficult access points, or rapidly evolving flood situations, **time is the only resource which cannot be recovered**.

Every moment without drainage can be irreversible. Water damage to buildings, networks, and operations compounds faster than any delayed response can address. When the time-window for intervention is measured in minutes, not hours, the weight and complexity of equipment becomes a critical variable.

OUR RESPONSE

Kubota's mobile ultra-light drainage pumps are built around a single principle: **guarantee operational readiness** where fixed infrastructure cannot.

Each unit weighs under 39 kg and is transportable by two people, with no needs for cranes or special tools. One single pump fits in a van. **Most of all: it is operational in minutes**. The system scales to the situation: units can run in parallel to maximise flow capacity, or in series to reach discharge points up to 20 metres away. A dedicated suction nozzle allows drainage down to 8 cm water depth.

Three deployment configurations support different response scales:

- **Drainage Pump Vehicle.** A fully self-contained unit for medium to heavy flood events, with flow capacity from 20 to 60 m³/min. All equipment (pumps, hoses, control panel and generator) is loaded on a truck and ready to deploy.
- **Drainage Pump Package.** A compact cabinet loadable onto a standard 2-ton truck, suitable for small to medium floods (5–10 m³/min). Can also serve as a temporary pumping station.
- **Drainage Pump Unit (Mini).** The highest-mobility option, transportable in the boot of a van or pick-up. Reaches flood sites on narrow access roads where larger vehicles cannot operate.

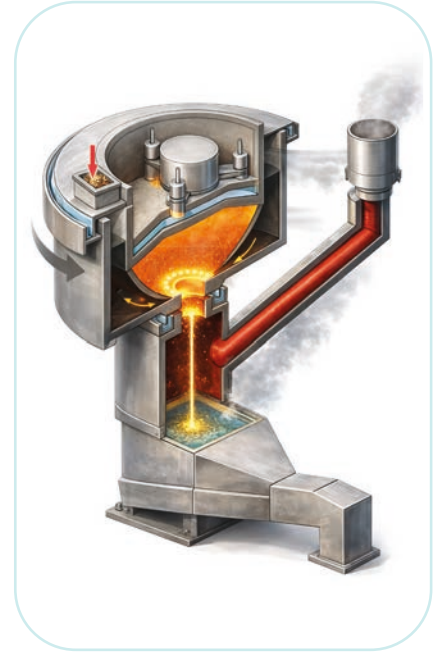
THE OUTCOME

The right capacity, in the right place, ready for when it matters.

Communities, contractors, and emergency teams can respond faster, reduce exposure time, and limit the damage that delayed drainage leaves behind. And since deployment requires no heavy machinery and minimal manpower, operational costs stay proportionate to the response.

- Hundreds of units delivered in Japan and overseas, proven in flood response, fire brigade water supply, temporary irrigation, and emergency pumping operations.





On your side, when **contamination** is the risk.

Melting Furnace (PFAS Destruction and Resource Recovery)

Treatment performance has to hold across two major challenges sewage sludge operators face today: recovering phosphorus at a time when global fertiliser demand is rising, and managing PFAS and other micropollutants as regulatory pressure increases across markets.

Sewage sludge has long been recognised as a valuable source of phosphorus. But unlocking that value safely is the real challenge. Micropollutants such as pathogens, antibiotics, persistent organic pollutants, and heavy metals can limit reuse, increase environmental risk, and create growing pressure around compliance and public health.

Infrastructure decisions made today need to remain reliable for decades. For municipal and industrial operators, the chosen solution must reduce contamination risk, support future compliance, and create long-term confidence.

OUR RESPONSE

Kubota's Surface Melting Furnace (KSMF) addresses both sides of this challenge in one high-temperature process. Operating at 1250°C to 1350°C, KSMF treats sewage sludge and other phosphorus-rich or PFAS-containing materials under conditions that support phosphorus recovery, heavy metal separation, and the decomposition of micropollutants.

In Japan, **KSMF slag has been registered as a high-quality fertiliser**, demonstrating KSMF's ability to convert sewage sludge into a valuable phosphorus resource with practical downstream use.

At the same time, more than 90% of volatile heavy metals are separated and removed from the slag, helping reduce the risk of soil and groundwater contamination. Precious metals, including gold, silver, copper, platinum, and palladium,

can also be recovered from the slag using Kubota's metal separation technology, creating additional resource value from the treatment process.

The same high-temperature operation also supports the decomposition of micropollutants, including PFAS. Tests conducted in Japan confirmed KSMF's potential as a high-temperature destruction route for PFAS-containing streams.

Proven through more than 30 projects delivered in Japan since the 1970s, KSMF combines phosphorus recovery, heavy metal separation, precious metal recovery, and micropollutant destruction in one process, ready to be applied in markets where resource recovery, sludge safety, and tighter environmental standards are becoming increasingly important.

THE OUTCOME

More value recovered. Less contamination risk. Greater confidence for the long term.

KSMF helps operators turn sewage sludge and other difficult waste streams into reusable resources by recovering phosphorus, separating heavy metals, enabling precious metal recovery, and supporting the destruction of micropollutants such as PFAS.

- Recover over 90% of available phosphorus from sewage sludge
- Deliver over 95% plant-available phosphorus in the final slag
- Separate and remove over 90% of volatile heavy metals such as cadmium, lead, and zinc
- Enable recovery of valuable metals such as gold, silver, copper, platinum, and palladium
- Demonstrated PFNA removal of over 99.999%
- Proven at full scale, with 30+ projects since the 1970s

On your side, when **water supply** cannot stop.

HRDIP Pipelines

Any water infrastructure can only be as strong as the network behind it. For utilities and asset owners, the challenge is not only pipe strength, but also whether the network can maintain continuity when conditions turn against it.

Aging networks, ground movement, seismic activity, liquefaction, subsidence: the conditions that test pipelines are rarely predictable, but the consequences of failure are immediate. For every utility facing infrastructure renewal decisions, the risk is tangible: joint failure, leakage, and service disruption arrive exactly when the system is under the greatest stress. When real hazard conditions strike, the weak point in the network is often the joint.

OUR RESPONSE

Kubota's HRDIP brings **hazard resilience** into the pipeline itself. The restrained chain-structure joint is engineered to absorb large ground displacement through extension, contraction, deflection, and anti-pull-out performance: when one joint reaches its limit, it engages the next, keeping the network intact along its full length.

Designed for applications from distribution lines to trunk mains, the system covers diameters from 75 mm to 2,600 mm and is suitable for critical sections where restoration after failure is difficult: populated areas, busy trunk roads, river and road crossings, fault zones, soft ground, and connections to structures where differential settlement is a known risk.

THE OUTCOME

A network that holds when it matters most. Continuity of supply, drastically reducing risk of joint failure under hazard conditions, and the confidence that water keeps flowing even when the ground beneath it moves. Since its first installation in 1974, **HRDIP has recorded no documented failures caused by earthquakes or natural hazards, including the 1995 Kobe earthquake, and the 2011 Great East Japan earthquake of Fukushima.**

- Kubota joint performance is certified at the highest rank under ISO 16134:2020.
- More than 66,000 km of HRDIP are installed worldwide (the product holds over 90% of the ductile iron pipe market in Japan).
- Reference installations include the Metropolitan Water District of Southern California, Weber Basin Water Conservancy District in Utah, and projects in Canada, Singapore, and Nepal.



No matter what task you have been assigned, if you are both enthusiastic and dedicated, it will always have meaning.

Gonshiro Kubota



**ON
YOUR
SIDE,
SINCE
1890**

In 1890, Gonshiro Kubota started his metal casting business at the age of 19. He became the first producer of iron water pipes in Japan, at a time when every competing company had abandoned the attempt. He built a company on a simple belief: products should not only be technically excellent, but useful for the good of society.

More than a century later, that belief still shapes the way Kubota works:

1986: the first KUBOTA MBR system enters operation, a technology that would define a new standard for wastewater treatment worldwide.

1990s: the first melting furnace for toxic ash and dioxin contamination, recovering phosphorus and metals, the foundation for what is today a proven technology for PFAS destruction and resource recovery.

1995: when the Great Hanshin earthquake struck, our earthquake-resistant ductile iron pipes held intact, accelerating the adoption of seismic-resilient infrastructure across Japan.

1998: the beginning of worldwide deployment of Submerged Membrane Units SMU®, marked by Europe's first MBR reference, delivered by Kubota.

2011: mobile pumps deployed in flood drainage operations following the Great East Japan earthquake and the Thailand floods.

Today, Kubota Water & Environment stands on that foundation. With over 7,000 installations worldwide, we work to bring to every project process knowledge, technical honesty, and support that holds up in practice.

Since 1890, the focus has not changed: solutions that are technically backed, commercially relevant, and designed to perform where the pressure is real.

**On your side.
From uncertainty
to predictable outcomes.**



Kubota