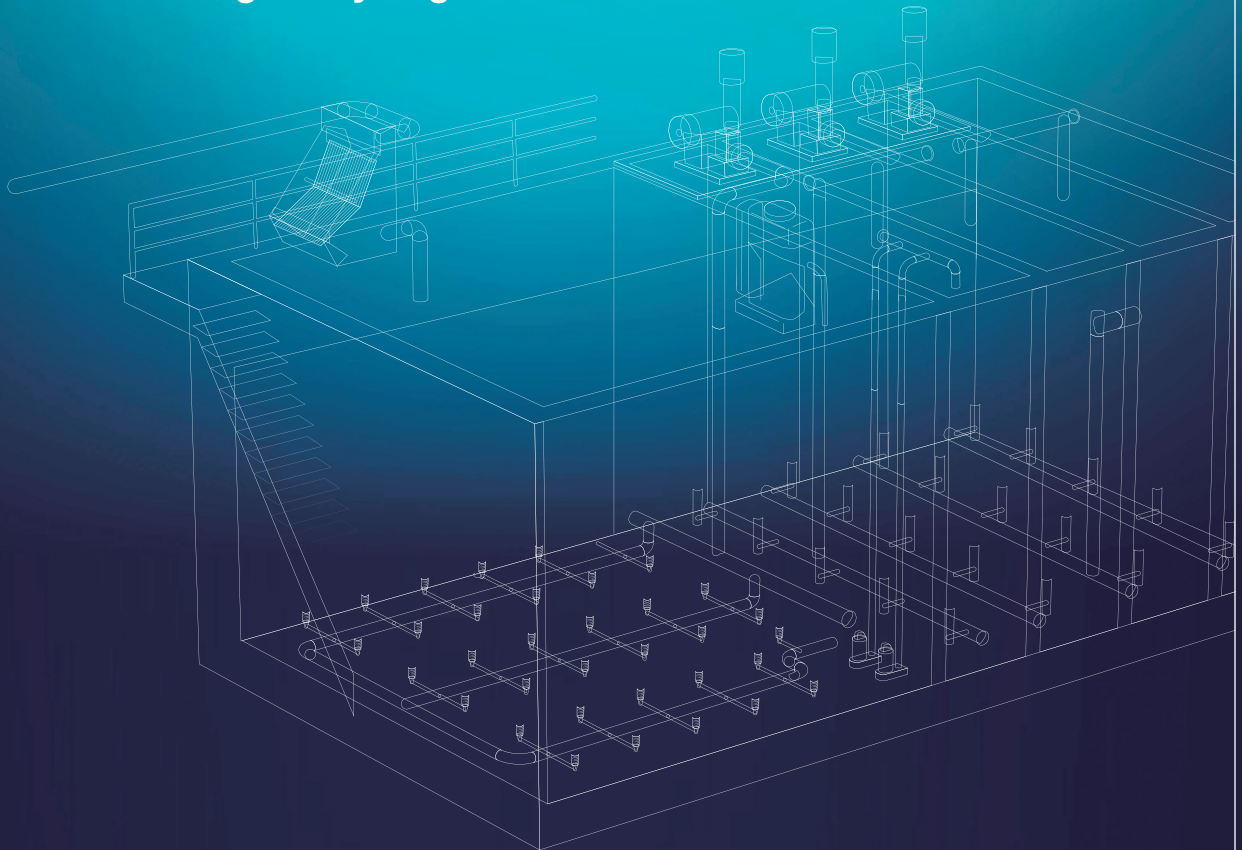


Revolutionizing the whole concept of decontamination facilities



Making the impossible possible!
The AIS eliminates sludge treatment
and achieves zero hydrogen sulfide

**Until now, it would have been thought unbelievable:
Compliance with sewage discharge standards
achieved with only the Aquablaster aeration
diffusion apparatus and bio-drip!
Plus, no generation of sludge or hydrogen sulfide!!**



Revolutionizing the whole concept of decontamination facilities*



Aience Innovative System

resolves all

kinds of wastewater issues simultaneously, and achieves **significant cost reductions.**

* Decontamination facilities are installed in advance at the entryways to sewers to accept sewer water.

What is the AIS?

The AIS (Aience Innovative System) is an unprecedented wastewater treatment technology that uses the Aquablaster aeration diffusion apparatus to carry out **milling / stirring aeration**, promoting the **totally aerobic respiration** of high-performance bacteria so that sludge treatment is unnecessary and zero hydrogen sulfide is achieved.

*Aquablaster: Patent No. 4749961

Features of the AIS

1

Pressure flotation
Non-chemical

2

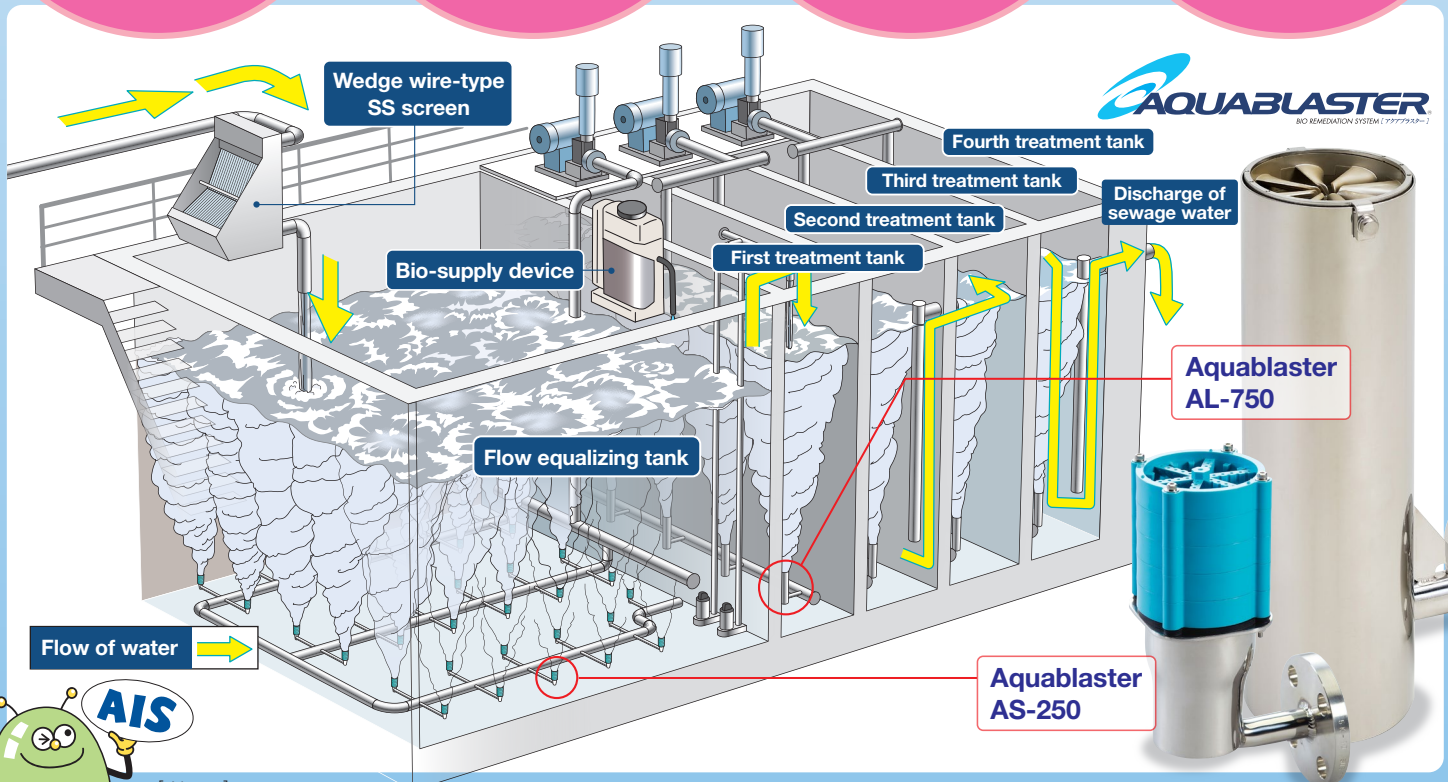
No sludge treatment required

3

Zero hydrogen sulfide guaranteed

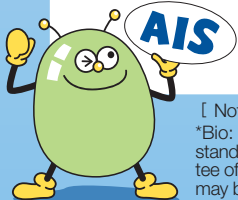
4

No settling tank required



[Notes]

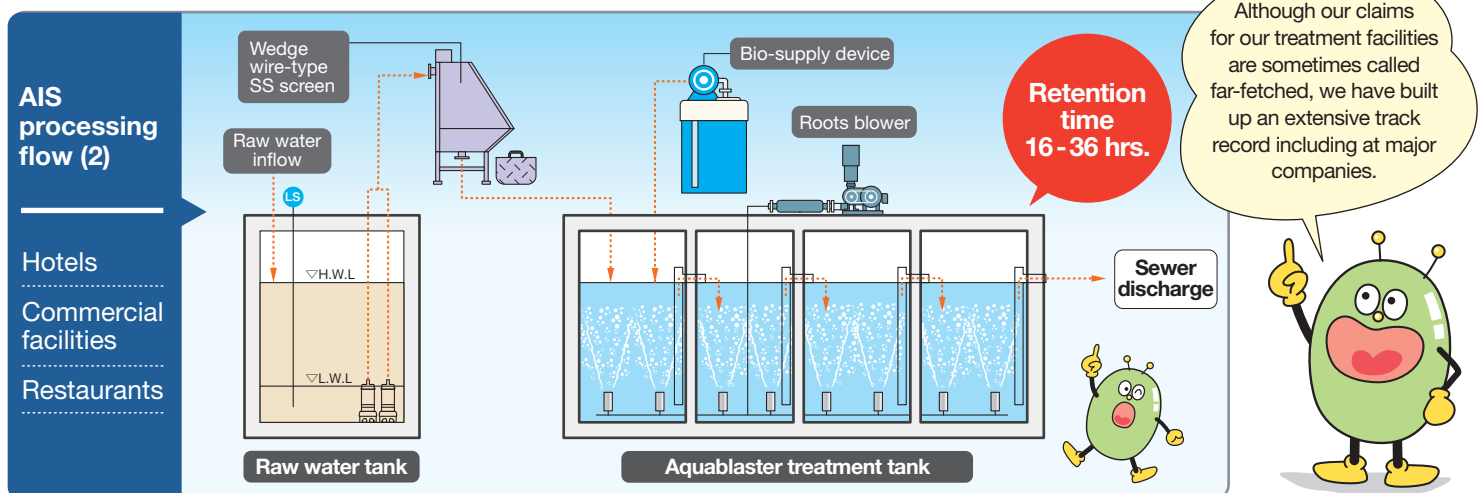
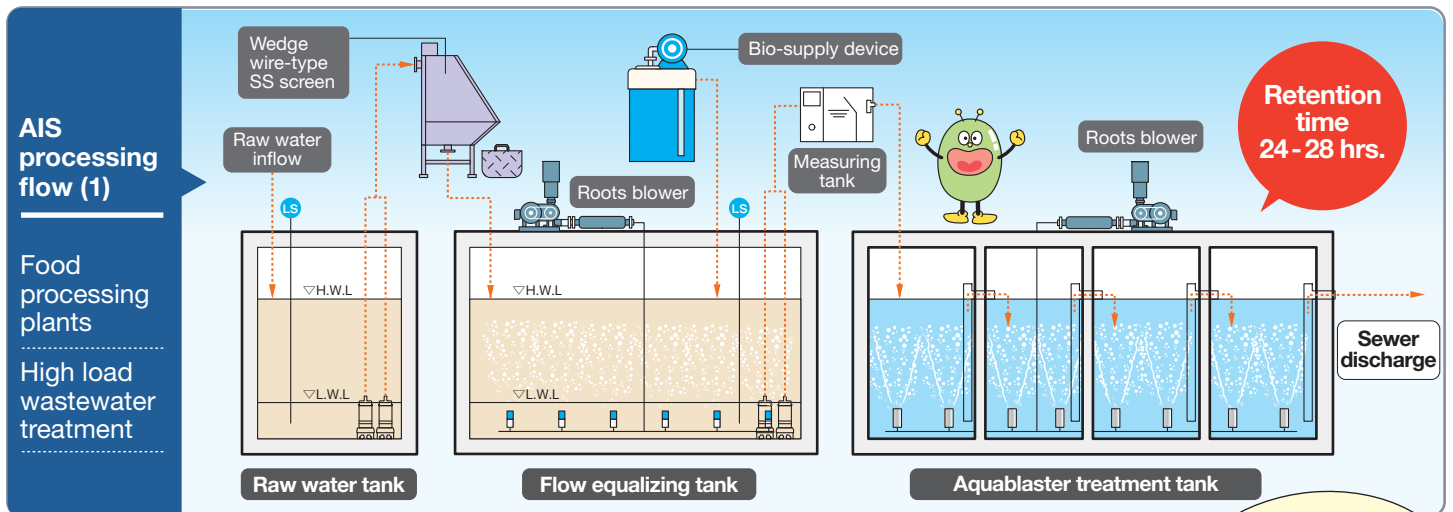
*Bio: Refers to high-performance fat-degrading bacteria. *Wastewater standards: Wastewater standards differ depending on the municipality, so please check the standard of the relevant area. *Guarantee of no odor generation: A guarantee that odors of hydrogen sulfide or decay are undetectable to human olfaction. Not a guarantee of the absence of all substance odors. * No pressurized flotation device required: However, when the normal-hexane extract level exceeds several thousand mg / L, it may be necessary to use a pressurized flotation device or chemicals in combination with the system. * No sludge treatment required: Please verify with a preliminary test.



We offer optimal systems,
whether for **newly established or existing facilities.**

The AIS processing flow

We can handle not only new construction but also renovation work.



Installation of AIS facilities

We comprehensively manage the installation process, from proposing optimum equipment to design, construction, and maintenance.

Also leave the follow-up to Aience, including guarantees of meeting wastewater standards and generating no hydrogen sulfide.

1

Discussions on new installation or renovation



Aience staff member visits and conducts an on-site survey.

2

Proposal and estimate



We submit an optimum plan and a cost estimate.

3

Contract



A contract is only signed when you are fully satisfied.

4

Design



Aience draws up an actual design blueprint based on discussions held earlier.

5

Construction



We carry out construction using technologies with a proven track record.

6

Security Maintenance



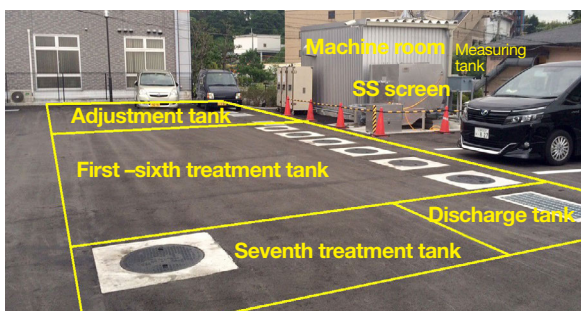
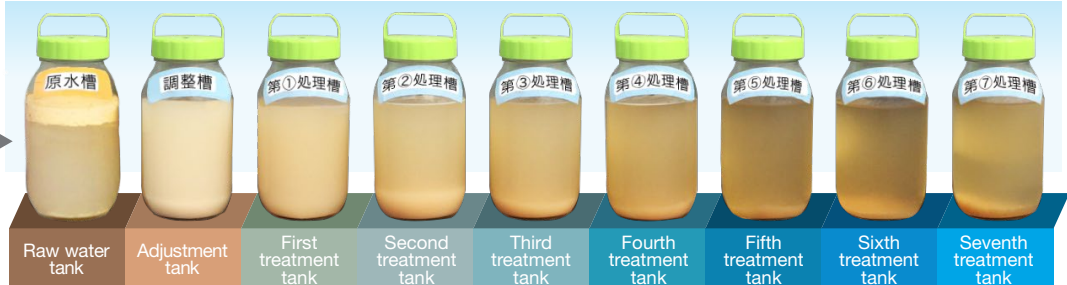
We offer support over the long term even after construction is complete.

Processing capacity greatly improved, costs greatly reduced.

AIS processing capacity

Processing of high-load wastewater from chicken processing proceeds as shown in the photograph.

Example of wastewater treatment at chicken processing plant



| | Raw water | Treated water |
|-------|-----------|-------------------|
| B O D | 5000mg/ℓ | Less than 100mg/L |
| S S | 3000mg/ℓ | Less than 100mg/L |
| N-hex | 2000mg/ℓ | Less than 5mg/L |

* Processing tank retention: 48 hrs.

AIS cost reduction examples

AIS drastically reduces the cost of wastewater treatment, by eliminating the need for pressurized flotation unit, reducing time spent on tank washing and maintenance work, etc. And since pressure loss is minimal, power consumption is reduced by 45%*.

*Disk type diffuser ratio

Renovation

Newly established



Major luxury hotel

Cost reduction of 19 million yen per year

By introducing Aquablaster into existing equipment, we eliminated the need for pressurized flotation unit.

| Processing results (Unit: mg/L) | |
|---------------------------------|-----------------------|
| B O D | : 800 → less than 120 |
| S S | : 600 → less than 80 |
| N-hex | : 150 → less than 10 |



Major bread factory

Cost reduction of 8 million yen per year

With the introduction of AIS, oil and sludge have vanished and the plant has been operating without trouble to this day.

| Processing results (Unit: mg/L) | |
|---------------------------------|-------------------------|
| B O D | : 3,000 → less than 600 |
| S S | : 1,600 → less than 600 |
| N-hex | : 500 → less than 30 |



Major corporation's boxed lunch factory

Cost reduction of 12 million yen per year

With pressurized flotation units removed and processing carried out with Aquablaster alone, water can be discharged to sewers.

| Processing results (Unit: mg/L) | |
|---------------------------------|-------------------------|
| B O D | : 2,500 → less than 400 |
| S S | : 1,000 → less than 400 |
| N-hex | : 350 → less than 40 |



Major supermarket / Central kitchen

Cost reduction of 15 million yen per year

The number of tanks was cut in half and AIS installed. Sludge has vanished, and the system was installed in a new factory as well.

| Processing results (Unit: mg/L) | |
|---------------------------------|-------------------------|
| B O D | : 1,000 → less than 200 |
| S S | : 800 → less than 200 |
| N-hex | : 100 → less than 30 |

If you still can't believe that "SS and unpleasant odors can be removed with no pressurized flotation device..."

Seeing is believing! Have a look at one of the sites where the AIS is installed.

This is the new common sense of Aience.



Special aeration and Bio-drip Sewage discharge standard value Below wastewater standard value
 Compliance with sewage discharge standards achieved with only aeration and bio-drip!
 Plus, no need for sludge processing, because SS* can be brought into compliance with wastewater discharge standards.

*SS (Suspended Solids):
 Insoluble matter suspended in water, referred to in the JIS (Japan Industrial Standards) as "suspended solids" and in environmental and wastewater discharge standards as "floating solids."

Mechanism of AIS

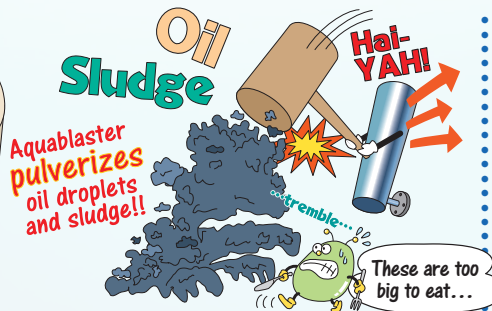
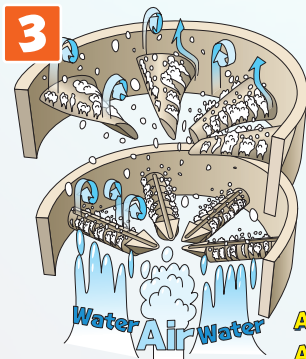
The Aquablaster aeration diffusion apparatus pulverizes organic substances and carries out **totally aerobic respiration.**

1 High-performance fat-degrading bacteria are introduced.

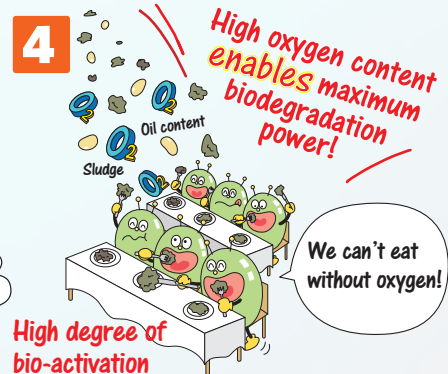


2 Patented special blades (No. 474961)

Water is rolled up and mixed with air.



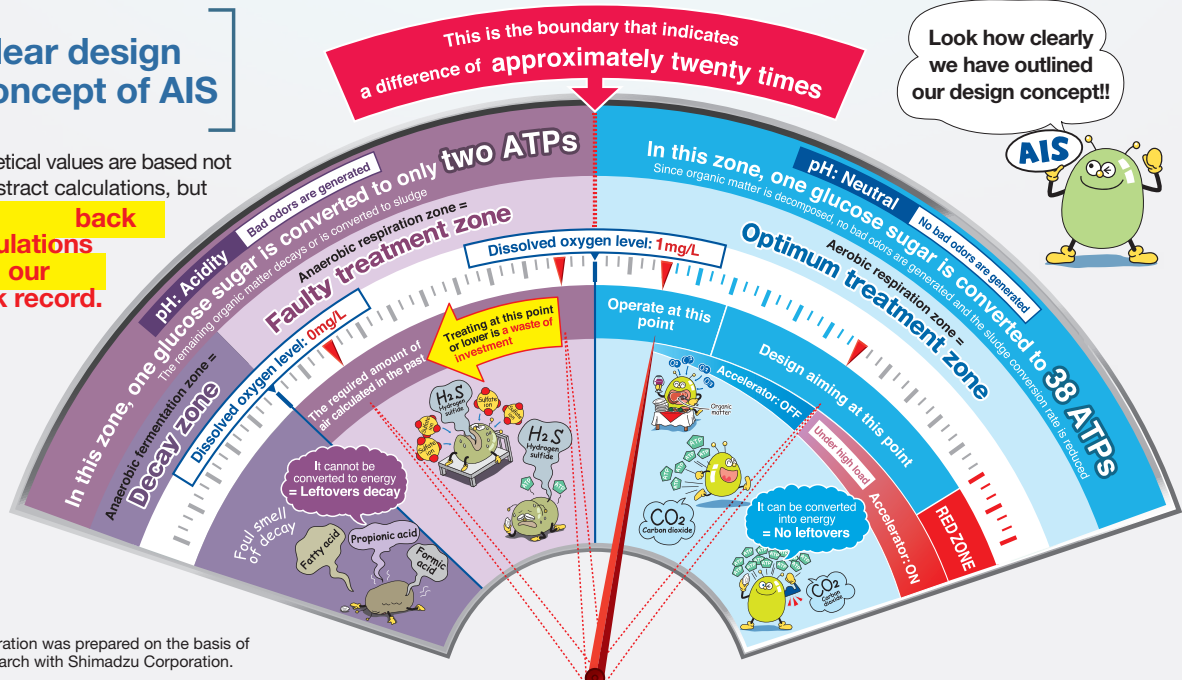
Action 1 Fine bubbles for high oxygen content!
Action 2 Oil droplets and sludge pulverized!



High degree of bio-activation

Clear design concept of AIS

Theoretical values are based not on abstract calculations, but on **back calculations from our track record.**



*This illustration was prepared on the basis of joint research with Shimadzu Corporation.

How does the [AIS Aience Innovative System] process wastewater so effectively?

| | Conventional decontamination facilities | AIS |
|---|---|--|
| Design concept | Because a conventional air volume formula are used, there is no margin of error, and issues cannot be resolved if they arise. | With our own original theory based on our experience and track record, we created an energy-efficient design that leaves ample breathing room, achieving optimal power-down, without generating sludge and hydrogen sulfide. |
| Air volume | It conforms to the conventional design formula, and there is no risk of insufficient air even if hydrogen sulfide is generated. | With this original theoretical formula derived from actual results, the system can deal with the actual load at each site. |
| Air diffuser | In a conventional diffuser, oxygen dissolution efficiency and convective stirring power inside the tank are low, and the pressure loss is high, resulting in high consumption of electricity. | By contrast, the milling / stirring aeration of our patented technology Aquablastrer supplies oxygen efficiently supplied with almost zero pressure loss and minimal power consumption. |
| Pre-processing | Relies on pressurized flotation, and sludge treatment costs are incurred. In addition, the equalizing tank often generates hydrogen sulfide. | Pre-processing begins with Aquablastrer milling / stirring aeration in the equalizing tank, so hydrogen sulfide is not generated. |
| Degrading bacteria | Conventional activated sludge bacteria: High-performance bacteria are sometimes used, but if oxygen is scarce, it is useless and decomposition is only partial. | Here, activated sludge is not used, but introduction of high-performance bacteria by intravenous drip enables totally aerobic respiration , thoroughly converting organic matter to ATP. |
| SS <small>(Suspended Solids)</small> | People believe it is natural for sludge to be generated, and that SS (suspended solids) cannot be eliminated. | However, with Aquablastrer milling / stirring aeration SS (suspended solids) are easily reduced to below wastewater discharge levels, and we have an 18-year track record to prove it. |

Examples of system installations

| Site | Problematic issue | Type | Result of introducing AIS | Cost reduction |
|---|--|------------------|--|--|
| Major luxury hotel | Troubles with hydrogen sulfide and processing failure. | Renovation | Hydrogen sulfide was eliminated, and it was found that with AIS alone could bring waste in line with wastewater discharge standards. There was no more need for pressurized flotation units or sludge discharge. As a result, two full-time night maintenance personnel were rendered redundant. | 19 million yen / year |
| Ultra-luxury hotel | Hydrogen sulfide was flowing into guest rooms and restaurants. | Renovation | Hydrogen sulfide was eliminated, and sewer surcharge fees paid to local governments due to poor processing were reduced to zero. | 15 million yen / year |
| Shimadzu Corporation | Wanted to stabilize kitchen wastewater treatment and eliminate industrial waste in the form of mineral oil-containing water. | New installation | Succeeded in decomposing mineral oil, which previously had to be processed as industrial waste, as well as kitchen wastewater. (See the company's 2006 environmental report, page 5) | No comparison target |
| Major corporation's boxed lunch factory | Pressurized flotation device caused stench (leading to complaints from neighbors), and sludge processing costs were high. | New installation | Pressurized flotation device eliminated, for totally aerobic treatment that does not generate bad smells. As a result, sewer surcharge fees were also reduced. | 12 million yen / year |
| Major bread factory | A major company's processing facilities completely | Renovation | A facility installed by a major company received a local government directive to improve due to its poor processing. An Aquablastrer system was added to the existing 60-ton water tank, and with a blaster tank installed in the latter stage, approved wastewater discharge levels were achieved. Severe putrefaction odors were also eliminated, and floating oils and fats caught by the grease trap in the preceding stage were also dissolved in the treatment tank. | 8 million yen / year |
| Major supermarket's central kitchen | A major water treatment company's equipment was not functioning, and there was an improvement order from the local government. | Renovation | Existing water tank was halved and divided into six tanks with the AIS installed. As a result, sludge generation was eliminated, and the maintenance team went from two persons to zero. Aience guarantees 24-hour aeration, but it is used for 16-hour aeration at this site. The system's performance was evaluated highly, and a special order was given for it to be introduced at a second new factory. | 15 million yen / year |
| Shimanaka Co., Ltd <small>(Chicken processing plant)</small> | To establish a new factory, a wastewater treatment facility was needed. | Renovation | The client was uneasy after being told by one of our major competitors that elimination of SS (suspended solids) was impossible, but felt confident introducing the system after seeing the wastewater treatment performance at the above-mentioned central kitchen. As a result, no sludge at all was generated for a year and a half, and BOD / SS are in the double digits and N-hex in the single digits. | No comparison target 12 million yen / year when compared with use of pressurized flotation device |

Sales agent



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