

NEWSLETTER

Wednesday 3 January 2024 **INDUSTRIAL VISIT TO INDAH WATER KONSORTIUM RESEARCH CENTER**



SUMMARY

On January 3rd 2024 (Wednesday), UTM extended a unique opportunity to students from section 15 & 16 that enrolled in the SECP1513 course to venture an exclusive industrial visit to the Indah Water Konsortium Research Centre. This excursion aims to immerse students in practical applications of technology and information systems, providing a firsthand understanding of their relevance in real-world scenarios. Beyond exposure to the latest industry technology, students are anticipated to gain valuable insights and industry experience guided by Aqil, Azmi Khair, Miss Aina & Mohd Hafiz. It helps student align the knowledge there with their academic pursuits in technology and information systems.

INDAH WATER KONSORTIUM (IWK)

Established in 1994, Indah Water Konsortium SDN BHD (IWK) stands as a national sewer concession company. IWK currently operates and maintains almost 7000 sewage treatment plants IWK operates with a workforce of 3000 employees and 21 operation offices



Indah Water Konsortium – TOTAL IFM, 1999)

DISCUSSED ISSUES

Implementing technology allows for real-time monitoring of sewer systems. Sensors and monitoring devices can be deployed at various points to collect data on flow rates, pressure, water quality, and other relevant parameters. Information systems then process this data, providing real-time insights that enable efficient control and management of the sewer infrastructure.

Information systems can analyze historical data to predict potential issues or failures in the sewer system. Predictive maintenance strategies can be employed to address potential problems before they become critical, minimizing downtime and reducing the risk of system failures

Automation technologies can be applied to control various processes within the sewer system. This includes automated valves, pumps, and other equipment that respond to real-time data inputs. Automated systems improve operational efficiency and reduce the need for manual intervention.

Monitoring Panel between plant and server – to ease control interface and facilitate real-time monitoring, management and communication between the plant's operation and central server



CHRISTINE
SHANE ONG
A23MJ5026



NUR DIYANA MOHD
HANAFIAH
A23MJ5046



NUR IMAN FARISYA
MOHD HAZLIN
A23MJ5030



AKINA AISHAH
YEAP
A23MJ5005

NEWSLETTER

Wednesday 3 January 2024

INDAH WATER TECHNOLOGIES



WATER FILTRATION PROCESSING

The initial step involves inspecting incoming sewage at the screening chamber, identifying any abnormal colors through sampling. The screening chamber filters out garbage, diverting it to landfills, while a grit chamber removes oil and grease. Subsequently, the sewage enters the aeration tank, where fine air bubbles aid in breaking down organic material by suspended solids and bacteria. The aeration tank sustains different microbe ranges crucial for the treatment process. The next stage occurs in the sedimentation or clarifier tank, separating heavy sludge for further processing and treating light sludge that floats on top. Following this, the effluent undergoes quality enhancement before being released into rivers. Monitoring involves assessing biological oxygen demand (BOD) and suspended solids, with treated water meeting stringent standards (less than 50mg/L for Standard B and less than 20mg/L for Standard A).

BIO FERTILIZER

They transform biosolids into a valuable commercial bio-fertilizer for non-food crops and landscape plants. Additionally, by combining biosolids with organic waste, they create a nutrient-rich meal for black soldier fly larvae, resulting in a high-quality protein meal. This sought-after feed is ideal for the aquaculture industry, especially in ornamental fish farming.



SCADA

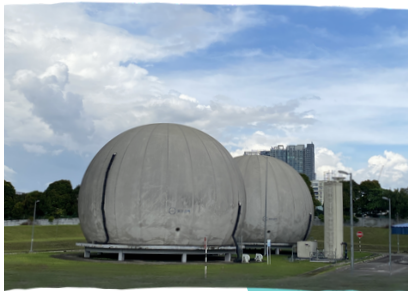
[Suprtvisory Control & Data Acquisition]

IWK's advanced software keeps industrial processes in check, gathering real-time data from remote sites to regulate equipment and conditions. It ensures 24/7 facility compliance and efficiency, with operating parts connected via fiber optic to the server. Plus, a backup battery guarantees uninterrupted operation, even during system shutdowns. Experience streamlined industrial process management with IWK.

SUSTAINABLE ENERGY

Indah Water Konsortium (IWK) is pioneering sustainable energy in wastewater management. Through creative initiatives, IWK taps into renewable energy sources, transforming biodegradable sewage waste into power. This not only addresses environmental concerns but also actively contributes to sustainable energy generation. With a focus on environmental responsibility, IWK leads the way in adopting eco-friendly solutions in wastewater management.

IWK's sewage treatment plants utilize cutting-edge anaerobic Digester technology to produce biogas, a renewable energy source harnessed for power generation. Currently, IWK boasts 6 sewage treatment facilities capable of processing 10,000 m³/day and generating 20 MV hours/day. This energy supply efficiently fuels Indah Water's entire production, marking a significant stride towards a cleaner and more sustainable future.



REFLECTION

The industrial visit to Indah Water Konsortium Research Centre was a memorable experience that provided valuable insights into the practical applications of technology and information systems in the field. This provided profound insights into the transformative impact of technological innovation on sewer management. Being able to witness the integration of this advanced technology, revealed a commitment to efficiency, sustainability and public well-being.

In aspects of human life, the functionality of the sewer systems contributed significantly to improve public health, environmental conservation and the overall quality of human life.



CHRISTINE
SHANE ONG
A23MJ5026



NUR DIYANA MOHD
HANAFIAH
A23MJ5046



NUR IMAN FARISYA
MOHD HAZLIN
A23MJ5030



AKINA AISHAH
YEAP
A23MJ5005