ASSOCIATION OF CONSULTING ENGINEERS SINGAPORE

Introduction and Free Trail of Web Application Customise and Optimise Design and Maintenance of Grease Separator Plus Lessons Learnt

Greasera™ Engineered Grease Separators

Date: **28 September 2023 (Thursday)**
Time: **3.00 pm to 5.00 pm**
Venue: **ACES Office**
18 Sin Ming Lane #06-01 Midview City Singapore 573960

Mode of Delivery: In person
Fee: Complimentary for ACES Member
CPD: PDU tbc

Registration Link and QR Code
https://forms.gle/idut7ePzEYiumJrv8

Optimizing Grease Separation in the Digital Age: Lessons from 30 Years of Experience

In the 2019 2nd edition of the PUB sanitary and plumbing code of practice, proprietary grease separators that adhere to EN 1825 and ASME standards have been officially greenlit for use in Singapore. This milestone came after a lengthy 27-year period since the initial deployment of the first proprietary grease separator. In the intervening period, inconsistent sizing methods and low-grade construction materials often resulted in early separator failure.

The manual approach to designing and selecting the best-fit grease separators based on available options often leaves many users grappling with ineffective separators and subsequent maintenance complications. This practice, not only unsustainable due to the use of subpar construction materials and a generic system design, but it also risks the occurrence of grease leaking into the public sewerage system when a poorly designed grease separation system is utilized.

Over time, these ill-conceived designs can lead to blockages and offensive odours, creating significant hurdles in maintaining the facility, increasing the cost of wastewater treatment at water reclamation plants, and threatening both public health and the environment.

To tackle this issue head-on, Birkhall Pte Ltd, with BCA's support, developed a digital platform under the IMDA Open Innovation Challenge to customise and optimise the design and maintenance of grease separators.

This presentation will discuss the following:

1. Comprehensive sizing methods as detailed in the EN 1825-2 standards.
2. The process of customising and dimensioning the grease separator in compliance with EN 1825 standards for both rectangular and circular tanks.
3. The application of Augmented Reality for visualising the grease separator in order to optimise capacity within confined spaces.
4. Design techniques that ensure easy operation and straightforward maintenance.
5. The development of an effective pumping system for handling grease and solids.

About the Speaker

Thomas Chan stands at the forefront of innovation in the field of grease separation systems, having pioneered the first automatic grease removal system in Singapore in 1992. Featuring a complete stainless-steel construction, this system marked the first proprietary grease separator accepted by the PUB. It successfully addressed the prevalent issues of grease accumulation in the sewers during the surge of the Food & Beverage sector within Singapore's commercial real estate landscape at that time.

In a bid to streamline the system without compromising on its effectiveness, Thomas introduced the concept of two-stage separators in 2009. By 2015, he started customizing grease separators in line with the EN 1825 standards, marking another milestone in his endless pursuit of a sustainable solution. His innovative concept has since been implemented in several notable locations including Jewel @ Changi Airport, the Millenia Walk shopping mall, and various NEA hawker centres, to name just a few.

In response to the government's call for digitalization and innovation and with the unwavering support of BCA, Thomas has developed a digital platform aimed at customizing and optimizing grease separation. This breakthrough was achieved under the IMDA Open Innovation Challenge programme, where he was entrusted with the task of disseminating this software solution for the wider benefit of the industry.

Thomas is the Director of **Birkhall Pte Ltd**, developer and brand owner of Greasera™ Engineered Grease Separator designed to EN 1825 standards. Thomas' vision is to create a grease free green city by sharing hands-on experience and knowledge with a sustainable grease separation technology meeting international standard.