**Synopsis**

KSB SE & Co. KGaA hydraulic expert Mr. Tobias Toren Knop will be presenting vital topics that will benefit plant designers and operators to achieve optimum pumping solutions in water and wastewater applications.

With KSB’s vast experience in this field, comprehensive research was conducted at Technical University of Berlin in Germany to establish guidelines on several aspects of pump station design and piping works. These guidelines will serve to equip the participants with good engineering practices and provide recommendations for building new pump stations or refurbishing the existing structures.

**Topics during the seminar will include:**

- **Pump Station Design** – Intake chamber design, sumps and piping arrangement recommendations
- **Computational Fluid Dynamic (CFD)** – Station design optimisation and customised solutions
- **Model Testing** – Flow simulation, problem identification and station design improvement
- **Water Hammer & Pressure Surge Control Solutions**
The Agenda:

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<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>12.30 – 13.30</td>
<td>Lunch &amp; Registration</td>
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<tr>
<td>13.30 – 14.30</td>
<td>Pump Station Design I</td>
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<tr>
<td>14.30 – 15.30</td>
<td>CFD &amp; Model Testing</td>
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<td>15.30 – 15.45</td>
<td>Tea Break</td>
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<td>15.45 – 16.45</td>
<td>Water Hammer</td>
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<tr>
<td>16.45 – 17.45</td>
<td>Pump Station Design II</td>
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<tr>
<td>17.45 – 18.00</td>
<td>Q&amp;A &amp; Closing</td>
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About the presenter: Mr. Tobias Toren Knop

Mr. Knop studied Mechanical Engineering with a focus on computer-aided product development at the Hannover University of Applied Sciences and Arts.

Working at KSB SE & Co. KGaA for project support in the field of water and wastewater, he is responsible for CFD and pressure surge calculations. His achievements in computer-aided engineering include numerically examining the particle flow in an exhaust system at an automotive supplier, as well as the air flow in blowers at a home appliance manufacturer to improve their operational performance.

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Kindly sign and submit your completed registration form to secretariat@aces.org.sg

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<th>Code</th>
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<tr>
<td>S21</td>
<td>ACES-KSB Seminar</td>
<td>ACES Member: $20</td>
<td>31 Aug 2018 (Fri)</td>
<td>Novotel Singapore on Stevens</td>
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<td>RE/RTO (M&amp;E): $40</td>
<td>1.30 pm to 6.00 pm</td>
<td>28 Stevens Road, Singapore 257878</td>
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Contact Person:  Mobile No.:  Email:

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Enclosed is a Cheque No: ________________________ (Cheque should be crossed and made payable to “Association of Consulting Engineers Singapore” and mailed to “18 Sin Ming Lane #06-01 Midview City, Singapore 573960, Attention: ACES Secretariat”.

[Note: On the back of the cheque, please indicate participant name & event name]

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By submitting and signing this application form, the company and individual applicant agree to the following:

a) The company and individual applicant has read and understood the terms of the flyer (if available) and the application form.
b) Payment for the course must be made (in form of cheque or cash) two weeks before the course commencement date.
c) ACES reserves the right to amend any details relating to the course, revise the course fees without prior notice, cancel or postponed the course.
d) Cancellation – In the event that participant is not able to attend, please inform us in writing at least 3 working days before the event date. Otherwise full payment is still applicable even if the participant did not turn up for the course.

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Signature: ______________________________________
Date: __________________________________________