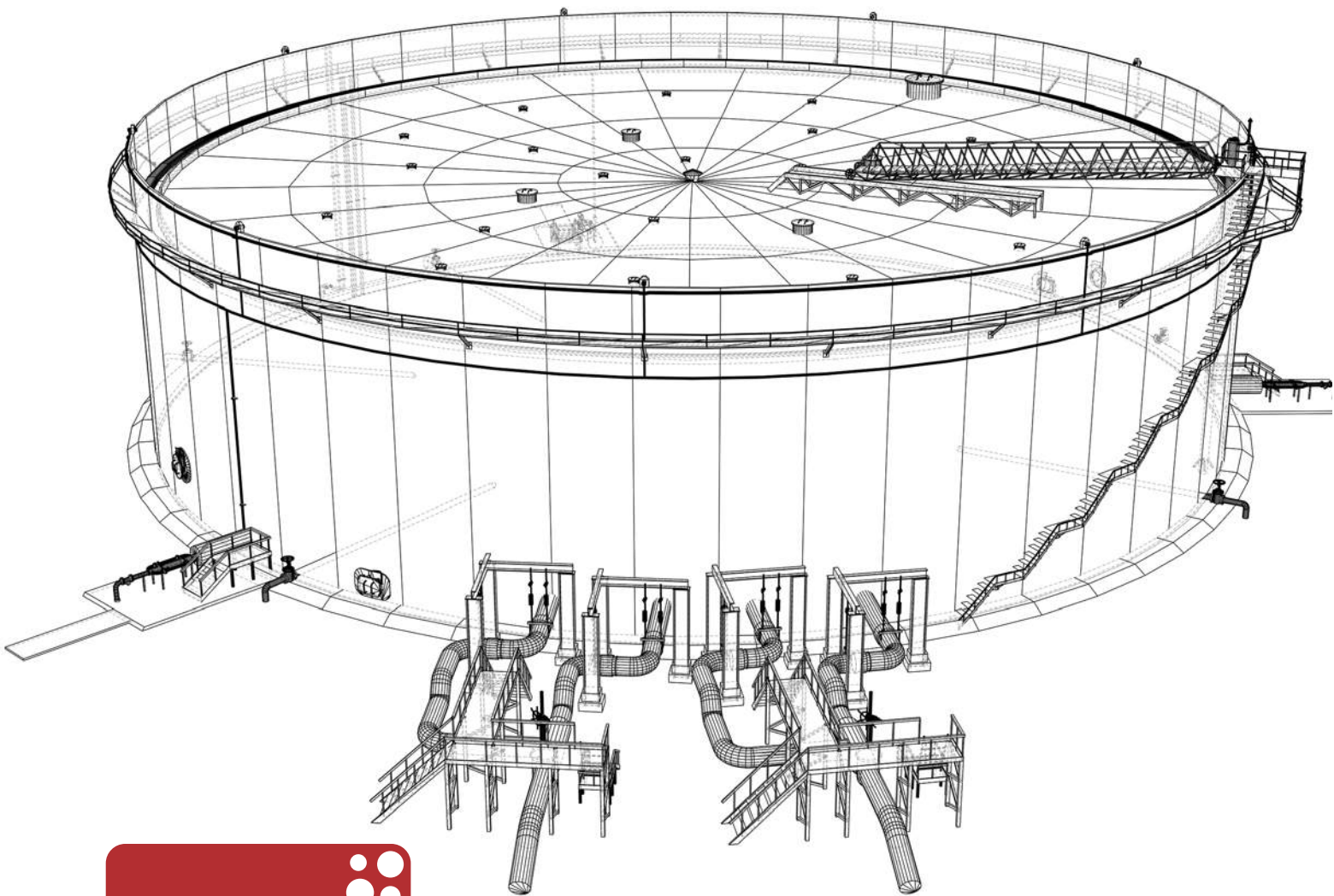


# 2018

## TANK STORAGE ASSOCIATION CONFERENCE & EXHIBITION



# MEMBERS & ASSOCIATE MEMBERS

The Tank Storage Association (TSA) is an industry based organisation whose members are dedicated to the professional provision of bulk liquid storage in the UK. Tank storage provides an essential interface between sea, inland barge, road, rail and pipeline logistics.

Our Associate Members play an essential role in Safety, Health and Environmental matters - sharing and learning operational experience, new products, innovation, services and contributing to the development of new guidance where appropriate.

We have several membership levels available for bulk liquid terminals, distribution terminals and hubs, and equipment and service suppliers.

Join us, and influence what matters to you.

Contact us for more information.

+44 (0)1462 488232  
info@tankstorage.org.uk



## Members



## Associate Members (Terminal Operators)



## Associate Members (Suppliers)



*Dear Delegates and Exhibitors*

It's a great pleasure to welcome you to the eighteenth edition of the UK's leading event for the bulk liquid storage sector, held at the Ricoh Arena in Coventry. The event, which has a proven track record of successfully bringing together people who passionately care about safe and effective bulk liquid storage operations, has grown significantly since its inception. Your presence is a great indication of the value and popularity of the annual UK Tank Storage Association Conference & Exhibition.

I do hope that you have noticed our membership's significant growth in the past year, through our Associates program, all of whom are invaluable in building our community of businesses that store liquids in bulk or provide equipment and services to the sector. I am pleased to say that many of our associates are also exhibiting today. Information about membership of the TSA can be found in the following pages.

This year we have sixty-two exhibitors who are keen to capitalise on the event's reputation to attract users with their knowledge, services and equipment. Please exploit this opportunity to look around and network with colleagues.

The conference programme has been carefully developed to reflect the key issues facing our sector today. We have six distinguished speakers from leaders in market analysis to the COMAH Competent Authority, and industry specialists who will speak on topics ranging from the challenges

facing the bulk liquid storage sector and cyber security, to preparing for flooding and safety leadership. Please join me in the presentation area to make the most of these important insights.

There are many challenges ahead including the impact of Brexit and withdrawal from the Customs Union, and the government's ambitious plans for decarbonisation which would see a significant reduction in the need for Hydrocarbon transport fuels from 2040 onwards.

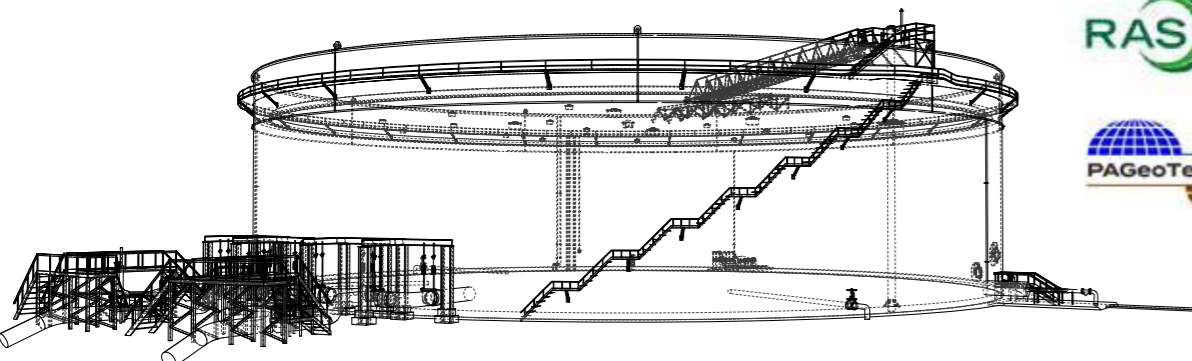
Whatever the challenges we must always remember that UK industry and our daily lifestyles rely on the import, movement and storage of bulk liquids, services which are increasingly being provided by the independent tank storage sector – we are a critical part of the supply chain for many businesses.

I do hope you enjoy this year's event.

Best Regards,

*Paul Penmead*

President – Tank Storage Association



Stopford specialises in the provision of robust independent consultancy, analysis and advice, for over three decades we have been serving the requirements of our clients from our team of industry leading experts.

Our experience encompasses a breadth of sectors including Oil & Gas, Chemicals, Food, Water and Waste to Energy. We have extensive experience in the fuel storage and handling industry and strive to design environmental and safety risk out of our client's projects whenever feasible to mitigate risk to the lowest practical extent. With activities across Europe, USA, the Middle East and Asia Pacific, Stopford is a leading UK energy and environmental consultancy.

**Think Energy. Think Environment.  
Think Engineering. Expect Excellence.**

#### Terminal Design

##### Multidisciplinary Design:

- Feasibility Studies
- FEED Studies
- Detailed Design
  - Flowsheet & P&IDs
  - Piping Design
  - 2D & 3D Modelling
  - BIM Modelling
  - PLC & Scada, URS & FDS Generation

#### Firewater Management & Control Measures

- Emergency Response
- Tertiary Containment Requirements
- Fire Risk Assessments – IP19
- Environmental Impact Assessments

#### Health & Safety Consultancy

- HAZOP, LOPA, Surge Analysis
- DSEAR Compliance, COMAH Safety Reports
- Functional Safety, IEC61508,61511, TUV Certified
  - Waste Management Plans
  - Regulation & Policy Compliance
  - Planning & Permitting
- Environmental Risk Assessments

#### Project Management

- CDM Duty Holder roles
- Planning (Primavera)
- Cost Control & Monitoring
- Procurement (Expediting)
- Construction supervision

#### Training

- Bespoke Process Safety packages accredited by Cogent



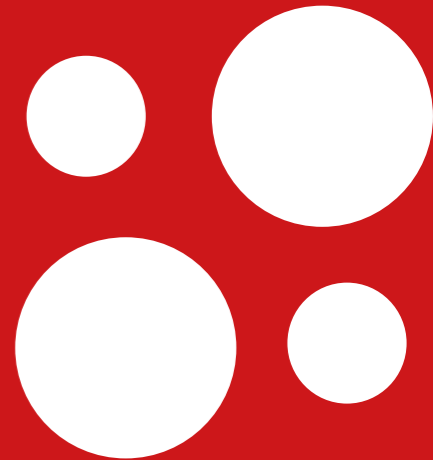
Certificate Number 5021  
ISO 9001:2015

www.stopford.co.uk | 0151 357 7740

Custom House, Merseyton Road, Ellesmere Port, CH65 3AD

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# CONFERENCE SCHEDULE



08.00 - 10.00

Delegate **Registration.**  
Exhibition & Coffee.

12.30 - 14.00

Exhibition & Buffet Lunch

10.00 - 10.05

**Introduction**  
*Paul Denmead - President, Tank Storage Association*

14.00 - 14.30

Building Better **Performance Measures**  
for Better Conversations to Provoke Change  
*Tony Gower Jones - Tripod Foundation*

10.05 - 10.10

Introduction by Conference Chair *Rear Admiral Paul Thomas CB - Chair, Process Safety Forum*

14.30 - 15.00

**Leadership** in Practice  
*Ian Travers - Director, ITL*

10.10 - 10.50

**Keynote:** Overview of trade imbalances and impact on European storage  
*John Leavens - Director, IHS Markit Oil Markets, Midstream & Downstream Consulting*

15.00 - 15.30

Exhibition & Refreshments

10.50 - 11.30

**Cybersecurity:** Implementation of Network Information Systems Regulations and COMAH  
*Sarabjit Purewal - Principal Specialist Inspector, Health and Safety Executive*

15.30 - 16.00

**Technical** Presentation  
*Speaker to be confirmed*

11.30 - 12.00

Exhibition & Refreshments

16.00 - 16.05

**Closing Remarks**  
*Paul Denmead -President, Tank Storage Association*

12.00 - 12.30

Why the Best Preparation for **Flooding** Happens on Dry Days  
*Dr Andrew Nixon - Senior Adviser, Environment Agency*

16.05

Event Closes

# 3D LASER SCANNING

ENGINEERING SURVEYORS CAPTURING 3D DATA FROM  
PROCESS, STORAGE AND MANUFACTURING ASSETS



## LASER SCANNING

- FAST DATA COLLECTION
- SAFER AND MORE ACCURATE
- VERSATILE, GLOBAL SHARING
- ECO FRIENDLY
- COST EFFECTIVE



## 3D MODELLING

- USING 3D LASER SCAN DATA
- COMPATIBLE WITH EXISTING SYSTEMS
- INTEGRATED ASSET / DRAWING MANAGEMENT
- WITH 2D DRAWING EXPORTING



## TANK ANALYSIS

- TILTING
- SETTLEMENT
- SHELL VERTICALITY
- RADIAL DEFLECTION



## TRADITIONAL SERVICES

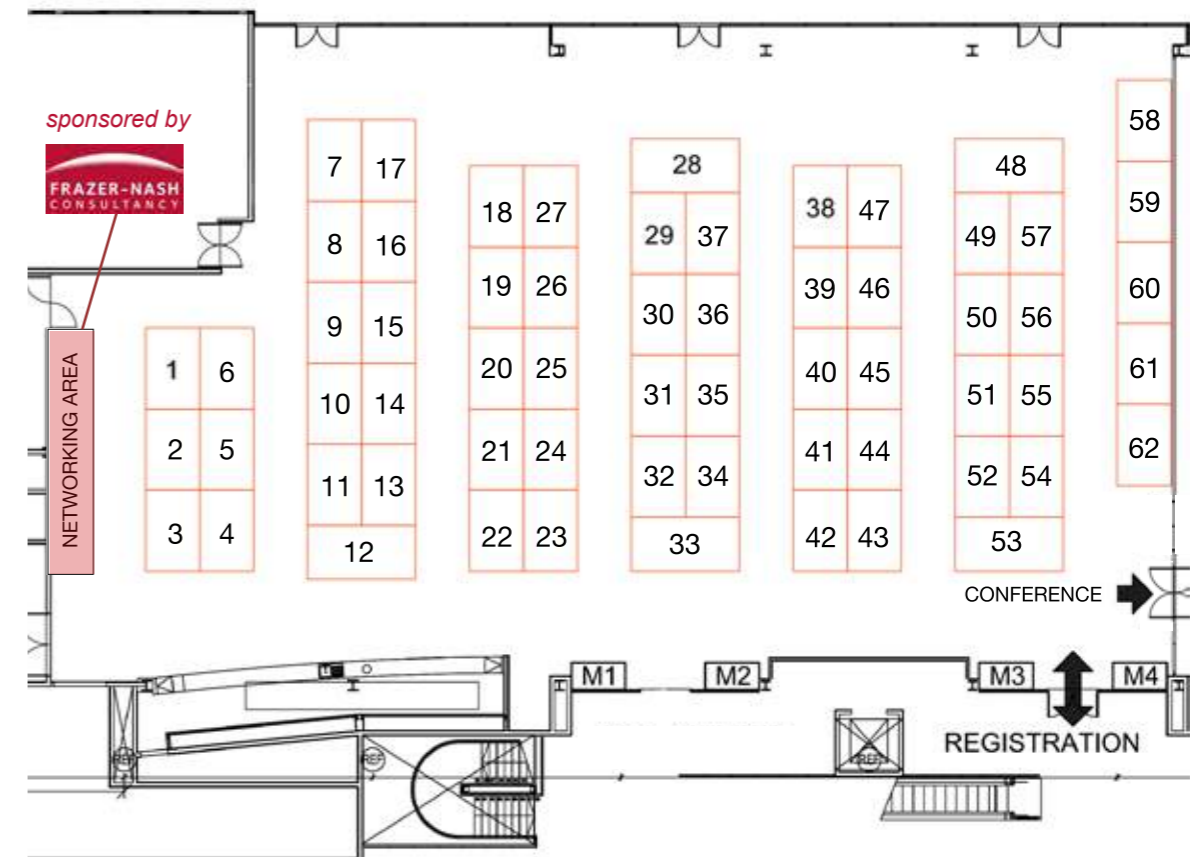
- P&IDS
- DSEAR
- COSHH & COMAH
- CAD BUREAU

STAND  
55

TO FIND OUT MORE ABOUT  
ADVANCED 3D LASER SOLUTIONS  
CONTACT COLIN PITTMAN  
DIRECTOR

ADVANCED  
3D LASER  
SOLUTIONS

# FLOORPLAN



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50	IFC Inflow	12	Wood
11	IKM Consulting	13	Yokogawa
32	Innospection	20	Zerust Oil & Gas



## EEMUA 159 STORAGE TANK INSPECTION & API 570 PIPELINE INSPECTION

*Reliable testing of assets from a company with integrity.*

## LEADERSHIP IN PROCESS SAFETY

**The chemical and oil and gas process industries are ever changing landscapes. Factors such as technology, politics and the economy all influence industry and, as these change rapidly, so must the way organisations operate.**

Risk must be managed in order to ensure that businesses can be reactive and stand the test of time, something that is at the forefront of the mind of the leaders responsible for an organisation's successes. With much at stake, it is all too easy to forget about the different types of risk which must be balanced. It seems obvious to prioritise business risk when under pressure from the board or customers, but managing low frequency – high consequence process safety risk is often lower in the priorities, perhaps because "it will never happen here". The key to a balanced approach to risk management is good leadership – something we will be hearing more and more as it becomes the latest industry and regulatory focus over the next 12 months.

It is recognised that strong leadership is good for business, but what does it actually mean in the context of process safety and how can we make it a tangible and practical aspect of a pre-existing safety management system? Ultimately, it means making, and demonstrating, a commitment to the control of major accident hazards, and applying the principles of process safety risk management with equal rigour to those for other types of risk.

Leadership is something that we at RAS have always incorporated into our risk management services. Technical

solutions are all well and good, but it is the understanding and endorsement of these solutions by those who rely on them that will make for effective process safety in the long term. It is often failures in leadership, for example lack of investment in maintenance or performance monitoring that lead to the failure of a technical measure. This is why leadership is important and why when our clients ask for a solution, we don't just provide the 'what', but the 'who', 'why' and 'how' too. This ultimately enables clients to make informed and practical decisions for their management systems, allowing them to take the reins and control their own risk.

Leadership comes naturally to us and is a long held principle of our service because it reflects our own values and what we strive to achieve internally too, which is an open and engaged workforce. By committing to sharing information with the workforce and the wider industry sector, a commitment to the safety of employees is clearly demonstrated, creating a positive and proactive safety culture. Not to mention the benefit of gathering information from other organisations too. This type of culture is infectious, resulting in a sustainable safety management system which is embraced by all.



RISK & HAZARD MANAGEMENT



We are a friendly, family-led company who care about providing our clients with the highest level of experience, dedication and peace of mind. From our UK office in Grimsby, we co-ordinate inspection teams that travel throughout the UK, Ireland and across the world. We are here to ensure your operational compliance meets the highest recognised standards - prioritising productivity and minimising down time.

*- Steve Delves, Managing Director of Viking Inspection*



- **Complete inspection service for storage tanks.**
- **Tank shells, floors, welds, corroded areas and post repairs, with UT, MPI and DPI**
- **Certified API 653, API 570 & EEMUA 159**
- **Pipeline integrity inspections using innovative LRUT**



# VPCI SHOWS IMPRESSIVE RESULTS FOR TANK FLOOR LIFE EXTENSION

By Stuart Rennie, Commercial Manager for Presserv Tank Brigade UK



## Flood Risk

Ardent are a dynamic and progressive Civil and Environmental Engineering Consultancy with a proven track record of providing flood risk advice to our private and public sector clients. Our public sector clients include the Environment Agency, County Councils and Local Authorities. Within Ardent our specialists provide the full spectrum of flood risk services from initial desktop studies through to delivery on site.

### Services

Ardent bespoke services are tailored to address the requirements of National Planning Policy Framework (NPPF) together with regional and local policy requirements while taking account of the Operator's and site constraints. Ardent consult with the Environment Agency, Lead Local Flood Authorities, Water Companies and Internal Drainage Boards as and when required. Any assessment of flood risk will involve some or all of the following elements of work:

- Desktop study to provide a qualitative assessment of flood risk to facilities from coastal, river, groundwater, sewer, surface water/overland flow and infrastructure failure;
- Undertake complex 1D, 2D and 3D hydraulic modelling to quantify flood risk;
- Assess resilience of facility to flooding from all sources of flood risk;
- Propose and assess mitigation options based on quantitative modelling; and
- Produce flood risk assessments (FRA's) and associated drainage strategies to support planning, inform emergency flood plans, overall resilience and business continuity.

## Loss of Containment

We provide qualitative, semi-quantitative and quantitative assessments for top-tier facilities to inform the preparation of safety reports, emergency plans, hazardous substances consent and planning permissions. For lower-tier establishments our work involves input into major accident prevention and policy (MAPP), safety reports and onsite emergency plans. This entails some or all of the following elements of work:

### Services

- Desktop studied identifying source, pathways and receptors;
- Production of high resolution 3D spill simulations and quantifying risk;
- Recommend design and procure appropriate containment mechanisms based on site operational requirements;
- Assist with securing hazardous substances consent from the local HAS; and
- Assist client with HSE requirements.

If you would like to discuss the services we can offer to your business, please do not hesitate to contact us.

**Brian Cafferkey**  
Director

[bcafferkey@ardent-ce.co.uk](mailto:bcafferkey@ardent-ce.co.uk)

**Lindsey Ions**  
Associate

[liions@ardent-ce.co.uk](mailto:liions@ardent-ce.co.uk)

Or call us on **0207 680 4088**

**Soil-side corrosion: the single biggest cause of storage tank failure. It costs UK industry millions in lost revenues, poses a major environmental threat and is harmful to personnel.**

But what's the solution? Most corrosion control methods – notorious for being messy and costly – are not without their challenges.

Take, for example, construction pads such as continuous asphalt, concrete and oily sand – a method once employed widely for tank preservation. But all these foundations provide a limited degree of protection and remain susceptible to ingress of corrosion species.

They may do more harm than good. There is evidence to suggest that bituminous or asphalt pads trap moisture and corrosive species between the underside of tank floor and construction pad, actually creating a corrosive environment. Furthermore, it is understood that the use of construction pads, when combined with a Cathodic Protection (CP) system to shield cathodic current, may actually result in the system being rendered ineffective.

The use of single bottom with secondary containment made high density polyethylene (HDPE) liner is another widely-implemented practice. However, inevitable air gaps between construction pad and tank bottom plates prevent full and uniform distribution of cathodic current on the underside surface of tank floor. Not to mention the practical difficulties for associated with retrofitting CP systems, especially if there is a second containment installed.

In addition to CP, another approach it to use of protective coatings on the soil-side of tank bottom plates. However, coatings are always prone to pin holes defects during application and damage during installation and at weld joints.

They are also subject to inevitable ageing process over time, leading to delamination and under coating corrosion.

Having amassed extensive field experience, I can confidently state that the effectiveness of all these techniques – either stand alone or combined – have been questionable in providing a comprehensive protection, especially against pitting corrosion.

So, what's the solution to a problem that has huge implications for profitability? One that I'm seeing impressive results from is the use of amine carboxylate-based vapor phase corrosion inhibitors.

These are chemical substances that reduce soil-side corrosion by a combination of volatilisation from a VpCI material, vapor transport through the ground and in the headspace between floor plates and the tank pad atmosphere, and adsorption onto entire underside bottom plate surfaces forming a molecular protective layer.

VpCI – the effectiveness of which can be assessed through online monitoring – comes in a powder form composed of fine white crystalline amine carboxylate-based material infused with silica. This eliminates clumping and ensures smooth fogging application through the tank floor.

It also comes as a thin liquid solution, delivered into the interstitial spaces under the tank floor through injection pipes. During tank construction, a modular dispensing system can be integrated into its foundation to inject slurry to provide protection.

Hundreds of tanks around the world are protected with this technology, and there's growing awareness in the UK of this solution, which ticks boxes for economics and the environment.



# MEET THE EXHIBITORS

Associate Members are Highlighted in Red.

**A**

 **3B Controls Ltd**

**3B Controls Ltd**  
**Stand 3**

3B Controls Limited manufacture low pressure valves and vacuum relief valves, breather valves, gauge hatches, emergency vents, manways, gas blanketing valves, storage tank breathers, pilot operated valves, flame arresters.



**ABB**  
**Stand 48 (Gold Sponsor)**

ABB Consulting provides technical and engineering services to help companies in the global process industries achieve operational excellence. We offer expertise in the following areas: inspection, integrity management, operations improvement, process safety, project services, site and asset regeneration, technical engineering, technical software, technical training and competency. ABB consultants work in partnership with customers, transferring knowledge to allow the benefits we deliver to be sustained and increased. We identify and implement pragmatic solutions based on technical excellence and industry expertise. We provide the full solution, from the identification of potential issues, right through to action implementation to ensure benefits are realised. This benefits our customers by reducing risk, optimising costs and improving manufacturing efficiency. As part of ABB, the global engineering and technology group, we have access to the expertise of over 150,000 employees in over 100 countries around the world. Safe, reliable, efficient operations.



**Adler & Allan**  
**Stand 17**

Adler and Allan operate across the UK and overseas, providing a full range of oil and environmental services to a blue chip customer base. A&A have been contracted to undertake specialist tank installation, cleaning and maintenance work with a number of national companies across a range of industries: Distribution Network Operators, Major Oil Companies, Logistics and Distribution Groups, Major Supermarket Chains, Defence Infrastructure Organisation, London Gateway. We provide complete turnkey tank installation packages including site drainage, interceptors and all related civil works including bund lining. A&A has provided response coverage to pipeline operators across the UK for many years and is now increasingly moving into planned preventative maintenance, contaminated land management and environmental consultancy. Adler and Allan also offer a range of services covering Spill Response, Tank Installation, Pollution Prevention, Fuel Supply, Mechanical & Electrical Services, Waste Management and Tankering.



**Advanced 3D Laser Solutions**  
**Stand 55**

Due to our background in oil and gas, Advanced 3D laser Solutions has been able to help our clients with engineering, design, draughting and surveying services across a whole spectrum of process, manufacturing and building industries using 3D laser scanning technology. Our clients not only benefit

from our petrochemical engineering background but also our experience, 3D Laser Surveying techniques and software applications including Tank Analysis (API 653) and Pipeline Isometrics (API 570); helping our clients with the forever ongoing demand for HSE compliance. As a very successful engineering consultancy we have implemented large multi-disciplined international projects for refineries, fuel distribution, gas chemical, pharmaceutical, water treatment and detergent companies to name but a few. Recent developments with point cloud processing software have made Laser Surveying an attractive method to capture site information quickly and accurately. Laser Surveying gathers millions of measured data points that would have taken months to collect using traditional methods.



**Allied Tanks**  
**Stand 54**

Our professional staff have 150 combined years of welding and tank fabrication experience. Our customers include a variety of global companies and are leaders in the chemical, fuel and water industries, amongst others. Our experienced and fully trained site team can help if your tank application is too large to be moved by road. Working with Allied means you can rest easy, knowing that all of the details are covered, your project will be made with the utmost focus on quality and will be delivered on time. We are happy to provide seamless engineering services to make the whole process as smooth and efficient as possible. Our design and manufacturing approach means we give you the ability to select from a number of components and design alternatives that give the right equipment and vessels for your job and the most cost-effective choice for your application. We actively manage your custom tank projects from conception through to completion to ensure that it

meets – or exceeds – your standards and is delivered on schedule. We work hard to keep you informed every step of the way.



#### Anton Paar Stand 16

Anton Paar supply measuring solutions to petrochemical companies, refineries, storage and testing facilities across the world. Our customers also include manufacturers of biofuels, bitumen, food & beverages. With a reputation for innovation and quality, Anton Paar manufactures an extensive range of portable, laboratory and process instrumentation. All backed by an extensive distribution, support and service network across the world. Our comprehensive range now includes: Process density & viscosity transmitters for product type identification blending and quality control, Laboratory density & viscosity instrumentation compliant with D4052, D7042, ISO12185, Handheld density instruments for high quality density measurement in the field ATEX rated and compliant with IP559 & D7777, Flash point & distillation equipment to D86, D92, D93, ISO13736, Microwave sample preparation systems for ICP, AA & ICP-MS analysis.



#### Aquilar Ltd Stand 28 (Catering Sponsor)

Aquilar is able to offer a comprehensive range of hydrocarbon liquid leak and spill detection solutions for above ground fuel storage tanks, buried tanks, valves and pipes using the TraceTek brand. Aquilar will also be demonstrating the TT-FFS fast fuel sensor, which has seen an increasing number of applications since its introduction 10 years ago with its ability to detect a hydrocarbon fuel leak within a few seconds of initial contact. TT-FFS and TTC-1 controller are rated

as a SIL-2 system per IEC 61508. To locate fuel leaking into the soil beneath tank floors or from buried pipes or valves Aquilar offers the TraceTek TT5000 range of sensing cables which capable of detecting the presence of liquid hydrocarbon fuels. The sensing cable can be monitored by electronics that identify the location of the spill to +/- 1 meter accuracy.



#### Assentech Sales Limited Stand 23

Established in 2009 by Ewart Cox, Managing Director, Assentech Sales Limited continues to grow in the specialist supply of top branded process safety, fluid transfer and tank storage equipment. Now holding certification by a UKAS accredited body to ISO 9001, ISO 14001 and OHSAS 18001 and nearing accreditation of the Fit for Nuclear programme, Assentech are very well respected within the industry. Our specialist knowledge of preventative maintenance practices and legislation has contributed to an increased demand for our services. We have a proven track record of improving site safety, reducing manufacturing costs and increasing reliability through our breather vent calibration service which operates under Assentech Rapid Response and Service Limited which is the maintenance side of the business.



#### ATEXOR Stand 7

ATEXOR Ltd. is your hazardous area lighting partner. Our focus is on improving work efficiency and safety of people working in hazardous areas. We design and manufacture SLAM® and MICA® lighting systems and products for Ex areas. All Atexor products are manufactured in Finland. In addition to ATEX and IECEx certified products, Atexor also offers products with GOST, DNV and other product relevant certifications. Atexor plays an active role on international committees developing standards for

equipment used in potentially explosive atmospheres.



#### Axflow Stand 37

Part of Axel Johnson International, AxFlow is Europe's leading source of pumps and pump expertise for the process industry. We have been operational in the UK for over 50 years and are the exclusive UK distributor for world leading pump manufacturers. Our comprehensive product portfolio encompasses positive displacement and centrifugal pump technologies. By maintaining long standing relationships with these manufacturers, coupled with an average employee length of service in excess of 10 years, enables us to offer the optimum solution for your application. We have many years' experience supplying and servicing pumps for tank storage facilities and our engineers operating from five facilities across the UK ensure we are there to support our customers and keep their process running. Please visit our stand today and ask about our innovative green pump technologies.

## B



#### BakerCorp Stand 38

BakerCorp, the industry leader in containment equipment rental solutions, provides cost-effective solutions for your temporary liquid containment needs. Specifically engineered for European industrial requirements Baker's rental tanks are available on a daily, weekly or monthly basis and are supported by Baker's 24/7 rapid response service. BakerCorp provides innovative solutions to an ever expanding number of markets that include: chemical, manufacturing, refining, construction, municipal, industrial services, environmental, remediation, power generation, aerospace, food processing, tank terminal/pipeline operations, transportation, pulp and paper, mining, electronics, wastewater,

and many others.



#### Baugh & Weedon Ltd Stand 31

Baugh & Weedon and sister company ETHER NDE are leading manufacturers of non-destructive testing (NDT) equipment including Magnetic Particle Inspection (MPI), Magnetic Flux Leakage (MFL), Ultrasonic (UT), Phased Array UT, Eddy Current (ECT) and Pulsed Eddy Current (PECT) inspection technologies. With an experienced team on hand, we are able to assist in all NDT applications and questions you may have.

## C



#### Cape Stand 10

Cape is an international leader in the provision of critical industrial services principally to the energy, infrastructure and natural resources sectors. The multi-disciplinary service Cape offers includes access systems, insulation, specialist coatings, passive fire protection, engineering services, refractory linings, environmental services, oil and gas storage tanks and heat exchanger replacement and refurbishment. Cape delivers safe, reliable and intelligent solutions both on and offshore. Cape employs over 16,400 people working across 21 countries and in 2015 reported adjusted revenue of £711.4 million.



#### Concrete Canvas Stand 15

Concrete Canvas (CC) is a flexible cement impregnated geotextile that hardens on hydration to form a durable, fibre reinforced, fire resistant and water proof concrete layer. Essentially concrete on a roll, it has rapidly gained market acceptance in a number of applications in and around refinery and terminal infrastructure. Primarily CC is used as a means of rapidly lining clay and earth secondary containment bunds. CC provides a hard armour surface protection preventing weathering erosion of the bund, negating the need of costly maintenance or remediation by securing the height and integrity of the structure. CC is fibre reinforced and has an abrasion resistance twice that of ordinary Portland cement. It can be installed at rates of up to 800sqm per day, minimising time and H&S permit requirements on site. It acts as an effective weed suppressant, reducing maintenance costs associated with grass cutting of top soils and negating the risk of fire from dried grasses.



#### Cougar Automation Stand 35

Cougar Automation Ltd is a well-established, reliable and sought-after supplier of System Integration Services. s one of the largest independent Control System Integrators in the UK we have all of the business systems, accreditations and financial strength necessary to effectively service and exceed the expectations of our corporate clients. We have extensive experience of all the major SCADA and PLC platforms - as well as many specialist or more niche programmable devices - and this pool of knowledge can be leveraged by any individual engineer or project team. This unique combination means that we offer the capacity and professionalism of a

large contractor whilst also excelling in delivering the highest quality service, flexibility and responsiveness of your favourite local independent.

## D



#### Dantec Stand 43

Dantec is a world leader in composite hose technology, applying 48 years of manufacturing and technical excellence to deliver solutions to a global distribution and support network spread across more than 50 countries. A Formula One trusted supplier for more than 15 years, Dantec is renowned for having the ultimate range of re safe and durable composite hose solutions. Our innovative products cover all types of bespoke Petrochemical, Marine and Industrial applications including fluid transfer of petroleum and chemicals, cryogenic hose for liquid gas transfer, fluoropolymer hose for the transfer of aggressive acids, biofuels, vapour hose for hydrocarbon products and special construction hose.



#### DMCS Ltd Stand 21

DMCS Ltd has 23 years' experience in the industry and was originally a member of the UK development team for the E.O.D.R. type of tank calibration technology. We are well known both Nationally and Internationally for providing a professional, accurate and reliable service. Meeting your requirements for volumetric capacity tables, safety insurance, environmental obligations and more, we provide the following professional services: External Tank Calibration, Internal Tank Calibration, Tank Settlement Survey, Floating Roof Seal Survey Measurement, Water Calibration. As the first choice of service provider for

many industries who store bulk liquid we serve: Oil Storage and Refineries - bulk petrol/oil product storage, Breweries, Distilleries, Soft Drinks – bulk spirits, liquor, beers, Food & Animal Feed Storage – Molasses, Food Oils, Ships & Barges - Tank Volume Calculations. We use internal E.O.D.R and external E.O.D.R tank calibration methods for vertical, horizontal and spherical storage vessels. ISO & BSI Accredited.

E

**Eddyfi Technologies**

Beyond current

**Eddyfi  
Stand 62**

Eddyfi Technologies is a label designed to maximise the potential of multiple advanced and niche NDT inspection technology brands. With its three centers of excellence in Québec (Canada), Swansea (UK), and Milton Keynes (UK), Eddyfi Technologies focuses on offering high-performance NDT solutions for the inspection of critical components and assets through three strong, complementary brands: Eddyfi, Silverwing, and TSC. The company has more than 235 employees, nine offices around the globe all staffed with NDT experts, and serves customers in more than 70 countries in such major industries as nuclear, power generation, oil & gas, and aerospace.



**Elaflex  
Stand 24**

ELAFLEX Ltd is based in Hoddesdon, Herts. We specialise in technical advanced rubber flexible hoses, ERV expansion joints, Mann Tek Dry Disconnect Couplings, ZVA Nozzles, hose end fittings and flanges for use in safety critical / industrial applications and operations. Our advanced rubber hoses are lightweight and flexible and are of an extruded construction for enhanced safety and long service life. The assemblies are made using

Spannfix and Spannloc safety clamp type couplings. The hoses are colour coded and to EN 12115 (el resistance) enhancing safety both in terms of media identification and electrical conductivity. We have also produced a new generation of rubber hoses for the Pharma, Biotech and Food industry. Our products comply with all relevant standards and certifications. We work closely with our customers also providing technical input for engineering excellence. With ELAFLEX you simply make the right choice.



**Elmac Technologies  
Stand 45**

With over 60 years of experience in manufacturing safety equipment, Elmac Technologies has grown to become one of the premier brands in the global market for plant protection and tank storage equipment. The products include in-line and end-of-line deflagration arresters, in-line detonation arresters, pressure/vacuum relief valves, emergency relief vents, tank blanketing valves, vents, hatches, access man ways and bursting discs. Supplying to worldwide clients, operating in a wide range of industrial sectors, Elmac utilises state-of-the-art commercial, manufacturing and test facilities in the UK and overseas to ensure high-quality products and servicing. Elmac is accredited to ISO 9001, 14001, 18001 and PAS 99, GOST and RTN. All products are ATEX accredited.



**Emerson  
Stand 57**

Emerson is a diversified global manufacturing company that brings technology and engineering together to provide innovative solutions to customers in the industrial, commercial and consumer markets. Liquid product terminals have become increasingly

complex while being held to tighter environmental and safety restrictions. Combined with an expected loss of nearly 50 percent of experienced talent over the next decade, it's critical to operate safely and reliably. Emerson automation solutions and expertise can help terminal managers improve utilisation, reduce energy usage, and maintain product quality for sustained profitability. That's why our customers around the world turn to us not only for automation technologies, but also for engineering services to help them plan, implement, and support their operations. With more than 7,500 industry experts around the world, we help solve the problems our customers face today and build an advantage for tomorrow.

F



**Fenelon Storage Tanks  
Stand 29**

Fenelon Storage Tanks are the market leading storage tank design, construction and refurbishment contractor operating in the United Kingdom and the Republic of Ireland. We have an experienced team working across a wide range of industry sectors and our services range from detailed design through to fabrication, site erection and term maintenance contracts. Whatever storage requirement you may have, Fenelon Storage Tanks can offer a comprehensive package of services including conceptual design, feasibility studies, detail design, fabrication, site construction and tank inspection. We are also a member of the Royal Society for the Prevention of Accidents and have been for a number of years now. Being a member of RoSPA enables us to apply our Health & Safety expertise to its full capability. This will not only ensure the safety of our own staff but it will also ensure the safety of a client's site and other contractors working alongside us.

# FUELVAC®

## THE INNOVATIVE DOUBLE-SKIN LINING SYSTEM

### Certified to BS EN 13160-7 by TUV NORD



**For more information visit: [www.abfad.co.uk](http://www.abfad.co.uk)**

Email: [info@abfad.co.uk](mailto:info@abfad.co.uk)

Tel. No: 0191 543 7166



### Advanced double skin lining system with leak detection monitoring

- 20-year extendable life service for client's storage tank assets
- Periodic non-destructive testing of weld seams eradicated. Tank weld seams are continuously monitored 24/7
- Controlled Capital Expenditure as no need to replace existing storage tanks
- Coating resistance to a wide range of chemicals, biofuels including 100% Ethanol, and Sulphate Reducing Bacteria
- Fuelvac® monitoring equipment can be linked to an on-site SCADA system
- Acts as the storage tank second skin giving clients time to react without loss of product containment
- Successfully installed for the protection of storage tanks for over a decade
- High performance linings from International Paints / AkzoNobel
- Utilising Class 1 vacuum monitoring which is the highest level of leak detection





#### Flotech Performance Systems Stand 58 (Lanyard Sponsor)

Flotech Performance Systems is a manufacturer and turnkey solutions provider to the Petrochemical, Process and Energy sectors, specialising in solutions for the storage, transfer and distribution of liquid and gas products. FlotechPS offers engineering services including design, manufacture, installation and site support from its facility in Fareham, Hampshire. The in-house design and manufacturing facility allows FlotechPS to react quickly and efficiently to the needs of any project from concept through to commissioning. FlotechPS is dedicated to providing quality products and services to all customers in the downstream industry and has recently worked for BP, Nustar, Valero, Vopak, Total, Inter terminals, ESSO, Oilserve, Walkers, Princes, Greenergy, Ineos Nitriles and Murco. FlotechPS listens carefully and works closely with customers to ensure solutions are fully aligned to the needs of the project.



#### FNC Stand 19

FNC (Fabbrica Nazionale Cilindri) was established in 1927 as a manufacturer of “made-to-measure” mechanical components. For over 50 years now FNC has been manufacturing fire prevention fittings for low pressure storage tanks and tank venting accessories. We offer our products and services based on our broad and deep knowledge of market developments, product properties, applications and processing. This enables us to contribute positively to our customers’ and manufacturers’ business operations. The current range of Flame Arresters (deflagration or (un)stable detonation proof) and Low Pressure Weight or Spring Loaded relief valves (over- or underpressure or a combination of both) is completed

by Emergency Vents and Blanketing Systems. The sales and application engineers in FNC are actively involved in helping customers develop new products through extensive R&D. FNC possesses in-house facilities for all assembling and testing as well as optionally adapting a product to the (customised) wishes of a client.



#### Frazer-Nash Consultancy Networking Area Sponsor

Frazer-Nash is a leading systems and engineering technology company. Our work makes a difference to things that matter in the world. With over 800 employees, Frazer-Nash works from a network of nine UK and three Australian locations. Our consultants apply their expertise to develop, enhance and protect our clients’ critical assets, systems and processes. In an uncertain world, we contribute to national security in a huge number of ways. We help make sure that power is generated and distributed to everyone who needs it. We support moving people and goods around and between the big cities of an increasingly urbanised society. We work to make the world a more sustainable place. We ensure governments save time and money when public spending globally is under huge pressure. And we help our clients wrestle with the challenges and opportunities of an ever-accelerating digital revolution.

## H



#### Hawkes Fire Stand 4

Hawkes Fire has a unique place in the UK fire protection industry. That uniqueness is based on our proven capability to supply fixed and mobile solutions coupled with the expertise to provide emergency response should the worst occur. From a length of hose

to a turnkey solution, we bring real incident know-how to the protection of high risk industries.



#### HMT Rubbaglas Stand 30

HMT brings a distinct level of innovation and service to the tank industry through a unique approach of partnering with customers to optimise tank operations. Knowing that every customer’s need is different, we use our decades of experience to customise solutions that help tank operations become more efficient, more productive and more profitable. HMT was founded in 1978 with the objective of providing better technology to the aboveground storage tank market. HMT’s founders sought to create products which not only solved the emissions problems of the day but also eliminated the operational issues created by the existing floating roof and seal technologies. The result is better products, better technology and more comprehensive solutions. HMT’s full suite of products include: External & Internal Seal Systems, Drain & Floating Suction Systems, Geodesic Domes, Skin & Pontoon Floating Roofs, Full Contact Floating Roofs, and Emissions Reduction Devices.



#### Honeywell Process Solutions Stand 33 (Silver Sponsor)

Cyber secure digital transformation for the Tank Storage Industry. Please visit us on stand 12 and see how our cyber security solutions can protect your process and your enterprise from internal and external cyber security threats, and how our Connected Plant offerings can harness the true value of the data from your people, assets and operations to drive actionable insights that reduce your costs and increase your bottom line.



#### Hydroblast Stand 2

Hydroblast Limited is one of the country’s premier water jetting companies, offering a wide range of services and working with a diverse selection of clients across Great Britain. What you need to know about Hydroblast is that we specialise in high-pressure and ultra high-pressure water jetting systems. Among our many specialist applications, we carry out tank cleaning, pipe cleaning, surface preparation and hydrodemolition: an innovative and non-destructive technique for getting rid of damaged or waste concrete while preserving the surrounding areas. All of this is done using top quality innovative equipment.

## I



#### IFC Inflow Stand 50

IFC Inflow is an international supplier of tanker loading equipment with over 25 years’ experience, providing loading and unloading solutions to customers in the road, rail and marine industries. We design and engineer solutions for all types of liquid loading, from petroleum to corrosive chemicals, using products from our range including; loading arms, bulk flow meters and tanker loading skids. IFC has experience in providing tanker loading solutions for the Chemical, Food and Petroleum industries and has a project team comprising of fluid handling specialists, instrument, electrical and design engineers competent to handle virtually all Loading Platform applications. Fast track projects, using our modular design concept are handled economically and efficiently with minimal client investment in the design function. We benefit from our own fabrication shop dedicated to loading platform and

associated production. Our dedicated design team are on hand to discuss your requirements.



#### IKM Consulting Stand 11

IKM have a 20 year legacy of innovation in Scotland and the UK. Our service portfolio sets us apart, providing a unique blend to our expert skillset. Our roots can be traced back to industrial and commercial projects in Oil & Gas and Petrochemicals. Since then, we have diversified our portfolio of services into Environmental & Geotechnical Engineering, Building Services, Surveying, 3D Scanning/Modelling/Visualisation and Training. The strength of our consulting services today is built on the foundations of these long standing teams and their extensive project experience – as is our brand. We have the technical knowledge, experience, safety standards, and accreditations to provide an exceptional service to each of our clients. Come and visit us at stand 9 to discuss our range of services including hazard perception & e-learning, storage tank compliance and bund capacity & COMAH.



#### Innospection Stand 32

Innospection is a provider of advanced and innovative inspection services and solutions for the integrity and lifetime assessment support of onshore and offshore topside, splash zone and subsea assets. An expert in electromagnetic inspection technologies such as Eddy Current and Magnetic Eddy Current (MEC) which is a further development of the fast corrosion screening SLOFEC™ technique, Innospection has delivered advanced non-destructive testing services to the worldwide process

industries including the Oil & Gas industry since 1998. Innospection’s storage tank inspection package with the next generation MEC technique and integrity management as per EEMUA 159 / API 653 standards is a cost effective solution with the benefit of a reliable and thorough inspection for peace of mind. The MEC-Floorscanners including the TÜV certified MEC-F15 Floorscanner have been designed and built for the high speed and high performance inspection of storage tank floors.



#### Intero Integrity Services Stand 9

Intero Integrity Services is the world’s only inspection and industrial services specialist to combine innovative technologies, critical insights, state-of-the-art equipment and advanced data management with a streamlined project approach. Formerly A.Hak Industrial Services, we are an agile company with a sizable backing and an enhanced management team dedicated to redefining asset performance. With Intero, you can significantly increase the lifetime and performance of your assets and installations. We know the inspection and industrial services solutions you need. We know how to analyze and manage your data to insightful effect. And we know what makes your projects run smoother.

## J



#### J Murphy & Sons Stand 59 & 60

J Murphy & Sons Ltd is a long established company with an extensive track record in construction & refurbishment of storage tanks and associated accessories, following the purchase of Land & Marine in 2013. Engineering forms a major part of the business, allowing us to offer comprehensive tank construction and repair capabilities. Working across a wide variety of industry sectors,



Murphy's has the experience and know-how to handle a range of storage tank related projects, including fixed and floating roof configurations and utilising the latest BSEN and API design codes. In addition to its tank construction capabilities, J Murphy & Sons is a leading manufacturer of floating roof tank seal equipment, internal floating covers, dome roofs and associated products. Offering a range of equipment, manufactured from quality materials, we continue to service the UK and Overseas market with conventional and lightweight Mechanical Primary Seals, Compression Plate Secondary and Double Seals.



#### John Bell Pipeline Equipment Ltd Stand 25

Designed to provide a safe surface for people to walk on and to prevent water from pooling, GRP is fast becoming the preferred alternative to steel. Core6 GRP is strong, durable, corrosion resistant, light weight, slip resistant, flame resistant and sturdy. GRP offers all these qualities and is significantly more cost effective than steel due to reduced maintenance requirements. An entire grated walkway can be made from Core6 GRP, including the structural support system and handrails. These products are coloured throughout the thickness, so there is no additional painting or treatment required on the final product. The material will have a pleasing aesthetic finish and provide long term service. Once on site any remedial work can be carried out using only hand tools.

**K**



#### Kanon Liquid Handling Stand 18

Kanon Loading Equipment B.V., founded in 1979, is a Netherlands based company supplying Marine, Road and Rail liquid transfer systems to an international market. The range of equipment currently comprises of

Marine Loading Arms, Top and Bottom Loading Arms, Folding Stair/Safety Cage combinations, Loading Platforms and Swivel Joints. Kanon operates worldwide via a network of carefully selected agents and associate companies. Kanon Liquid Handling Ltd is a sister company of Kanon B.V. promoting Kanon products in the UK and Ireland. Based in the Midlands, we also offer a comprehensive service and repair facility. Kanon UK also design and manufacture a wide range of Drum and IBC Filling Systems. From fully automated robotic systems to simple manual filling, these can be on a supply only, or full turnkey basis to include additional equipment including conveyors, pumps, weigh scales, cleanroom facilities and fume extraction, all designed to specifically suit your requirements.



#### KDC Contractors Stand 39

As a leading specialist in decommissioning, decontamination, tank dismantling, demolition and remediation. KDC provide competitive services to the fuel storage, refining and petrochemical sectors across the UK; with offices located in Manchester and Grangemouth. Our operatives are trained and highly competent at working in diverse environments on COMAH sites within high hazard, live facilities. KDC is a trusted specialist contractor for clients including: British Petroleum, Phillips 66, Chevron and Exxon Mobil, to name a few. We continue to work with many of our clients as part of long term frameworks. Our clients value our high standards with regard to project planning and delivery. Our focus is on exemplary safety, health, environmental and quality performance across all areas of our integrated management system; as such we are certified to ISO9001, ISO14001 and OHSAS18001. To ensure our clients have complete confidence we are regularly audited by external companies, including Achilles FPAL.



#### Kinder-Janes Engineers Stand 14

We are the UK representative and distributor for a number of world leading pump, compressor, turbo-expander, heat exchanger, vacuum equipment and packaged equipment manufacturers. We supply high quality process equipment to all the major offshore and onshore oil and gas, petrochemical, chemical and pharmaceutical companies as well as to many leading power, biotech, food and general industrial sites. Our customers include end users, contractors and OEM's operating in these sectors, and we have particular expertise in the supply of API compliant equipment for the offshore and onshore oil and gas industry. Kinder-Janes have a diverse, well established product range and an experienced team of engineers enabling us to provide our customers with excellent support throughout the operating life of the equipment. From the initial selection, though quotation, supply, commissioning and a complete after-sales service, you are assured of dedicated, professional and personal support from Kinder-Janes.



#### Knowsley SK Stand 61

Knowsley SK is renowned for the design and manufacture of innovative firefighting systems for the protection of high value Oil, Gas & Petrochemical installations. The KSK brand is recognised worldwide with an extensive reference list and pre qualifications with the leading IOC's and their subsidiaries. Knowsley SK Ltd has an enviable reputation for finding the complete firefighting

solution, incorporating highly reliable systems & equipment for use in all manner of harsh environments. We manufacture and supply products into the -50°C extremes of mid-winter in the Caspian region and also to the +60°C summer heat of the Middle East. The product range includes hydrants, monitors, cabinets and ancillaries plus more sophisticated system packages including deluge skids, foam making equipment and remote operated monitor systems. With a century of expertise, continuous product development, and the backing of a worldwide support network, Knowsley SK is the first choice for high-value asset protection.

**M**

**Mann Tek®**

**Manntek  
Stand 47**

Mann-Tek AB of Sweden is the World's leading producers of Dry Disconnect

and Safety Breakaway couplings. We manufacture in a wide range of special materials to suit almost any chemical transferred by Sea, Road or Rail today. Our couplings are made to the highest possible standard and are recognised around the globe as 'Best in Class'. Dry Disconnect couplings from Manntek not only prevent spillage they also save money and the environment. Manntek protects human life and the environment.



**MHT Technology Ltd**  
Leading the way forward in Tank and Terminal Management

**MHT Technology Ltd  
Stand 34**

MHT Technology Ltd is a leading global supplier of Tank and Terminal Management solutions to the oil, gas and petro-chemical industry. We specialise in terminal/depot management systems including truck loading automation, tank gauging and inventory management, stock accounting and reconciliation, overfill prevention, plus much more. Our terminal management solutions give our customers a safe, reliable and efficient

way to manage their assets through the provision of comprehensive alarm management; planning, monitoring and recording product movements; leak detection; theft monitoring and stock reconciliation. We utilise open standards and specialise in integrating instruments from different vendors. All our software solutions are fully scalable and can be installed on virtual and/or redundant servers to provide a fault tolerant, high availability system. We offer a comprehensive service portfolio covering site surveys, equipment selection and procurement, routine and emergency maintenance, installation, commissioning, spares and repairs.



**Mistras Group  
Stand 22**

MISTRAS Group is one of the world's largest suppliers of integrity and inspection services. Operating throughout the UK as MISTRAS Group Limited, we specialise in providing innovative asset integrity solutions for all projects. We also offer enhanced

services including asset monitoring, engineering services, advanced and conventional NDT. Mistras a "one source" global provider of technology-enabled asset protection solutions used to evaluate the structural integrity of critical energy, industrial and public infrastructure. Mission critical services and solutions we deliver globally and provide customers the ability to extend the useful life of their assets, improve productivity & profitability, complying with government safety and environmental regulations and enhancing management operational decisions. MISTRAS uniquely combines its industry-leading products and technologies - 24/7 on-line monitoring of critical assets; mechanical integrity (MI) and non-destructive testing (NDT) services; and its proprietary world class data warehousing & analysis software- to provide comprehensive and competitive products, systems and services solutions from a single source provider.



**NDT Global Services  
Stand 6**

NDT Global Services specialises in providing a spectrum of inspection and test equipment for inspection companies, process plant, manufacturing and service industries for UK and overseas. Specialising in Guided wave pipe inspection service. It allows long lengths of pipes in difficult to access areas to be quickly screened for corrosion or other defects. Operating on pipes from 2" diameter, the wavemaker system employs lightweight transducer rings to send guided-ultrasonic waves up to 100m in each direction along the pipe. The wavemaker system can use both torsional and longitudinal waves. This means that the inspection can be performed on both gas and liquid filled pipes. Where the system is commonly used: road crossings, wall penetrations, straight runs of pipe where 100% of the volume must be inspected, inspecting under many types of supports, elevated pipework, inspecting for corrosion under insulation, cryogenic pipework, sphere legs, jetty lines and buried lines.

**O**



**Oceaneering  
Stand 36**

We deliver integrated solutions across the life of field to provide greater value and a lower total cost of ownership. Using integrated tools, services, innovative technology, and manpower, we increase oil and gas project quality and reliability while minimising risk on a global scale.



**P&I Design  
Stand 1**

P & I Design Ltd are again pleased to support this TSA Conference. Established in 1978, we provide a Consultancy, Engineering Design and Support Service to the Process Industry. The expertise of our multi-disciplined team allows us to provide services to our clients, from project conception through to detailed design, commissioning and operational support. We have for many years specialised in the Tank Storage Industry providing services including; Terminal Automation Systems - design and integration utilising PLC/SCADA-HMI, Safety Instrumented Systems in accordance with IEC 61511, Functional Safety Management, including the provision of Risk Assessments, Functional Safety Assessments and Audits, On-site support, commissioning, maintenance, ATEX inspections and SIS Proof Testing. We can also assist in the implementation of the recently introduced HSE OG 0086 – Cyber Security for Industrial Automation and Control Systems (IACS) and CDOIF guidance on the Management of Installed Safety Instrumented Systems.

**PRESSERV**

**Presserv  
Stand 5**

Presserv is the leading specialist in preservation and corrosion protection within the oil, gas and shipping industry globally. Ever since the establishment, the company has developed unique solutions to take care of the customers' assets. Together with our partners we offer standardized as well as customized solutions for an optimal protection. The company also supplies a range of products for pre-treatment, surface preparation and corrosion protection.



**Protego UK  
Stand 27**

PROTEGO is the leading manufacturer of tank valves and flame arresters and tank equipment. PROTEGO products are sold throughout the world and use innovative technology to achieve high levels of performance. PROTEGO will be demonstrating their sizing programme which allows the user to calculate the venting requirements for normal and emergency venting for atmospheric and low pressure storage tanks according to the new ISO 28300 / API 2000 7th edition. PROTEGO pressure / vacuum breather valves are available both with and without flame arresters. We also supply emergency relief valves, tank blanketing valves and special designs suitable for cold weather or polymerising vapour service. PROTEGO Tank equipment complements the flame arrester and valve range. We manufacture floating suction units and oil skimmers. Protego will be exhibiting the Lightning Master range of lightning and static protection solutions. The MAGS bypass conductor system provides a new and innovative solution to bonding floating roofs to the tank shell as required by API 545, IEC 62305 and EN14015.

**Reynolds Training Services™**

Visit us on **STAND 40**

**10 Years of Excellence** in the Provision of Training, Assessment and Competence Management.

Coming in 2019 - Science Manufacturing Technician Specialism for Bulk Liquid Terminal Technician Apprenticeship with the New Qualification L3 Diploma for Bulk Storage Operator Technician.

Track all elements of your training and progress with My-iTR, our online Learning and Competence Management System.

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INDIVIDUAL TRAINING RECORD

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[www.My-iTR.com](http://www.My-iTR.com)

PRUFTECHNIK are market leaders in maintenance technology. As specialists in Rotating / Reliability machine maintenance and monitoring systems, we have been in the development of laser measurement and condition monitoring systems, for 40+ years. Laser Alignment – As market leaders for accuracy and simplicity of use, our laser measurement product range now encompasses multi-coupling shaft alignment, roll (parallel) measurement, flatness, straightness and dynamic measurement of machine movement. Condition Monitoring – Portable systems headed by the VIBXPERT II dual channel analyser and balancer. On-line systems range from simple VIBREX systems to the 140+ channel SIGNALMASTER systems for complex monitoring and analysis tasks. Installation & Diagnostic / Training Centre - Ranging from training to our team of service specialists - running measurement tasks on your plant - our comprehensive customer support is committed to provide the highest standard of support available in the market.

**R**



Radar Tank Gauging Ltd is the distributor for Rosemount 'Raptor' high accuracy tank gauging systems for any facility storing high value liquid products. The system is based upon radar tank gauges offering high accuracy required to meet HM Customs & Excise requirements. In addition to no moving parts and

accuracy to 0.5mm these gauges can also be supplied with emulation output cards enabling them to emulate old servo type gauges. Raptor really takes tank gauging to another level, enabling any facility to be better equipped to handle the ever-increasing demands on efficiency, safety and accuracy. It is a complete and flexible tank gauging system, based on the open industry standard FOUNDATION™ fieldbus. Raptor can be used for refineries, tank terminals and in the petrochemical industry. The Rosemount Tank Gauging system also supports the Emerson's Smart Wireless solution, which is based on WirelessHART™, the emerging industry standard for wireless field networks.



RISK & HAZARD MANAGEMENT

RAS are risk specialists in the chemical, oil and gas, and pharmaceutical sectors. We understand the specific risk challenges faced by these industries because we are dedicated to them. Our experts don't just identify, assess, manage and communicate risk; we work alongside our clients as trusted partners – spotting issues before they become problems. The effective management of risk requires a holistic approach that considers the organisation as a whole. For this reason the specialists at RAS cover risk in three key areas: safety, environment and business. We work across all aspects of risk, from Quantitative Risk Assessments through to the 'softer' risks which may affect an organisation's reputation.



Reynolds Training Services Ltd fuels the bulk liquid warehousing sector with safety and compliance. We achieve this via a set of safety tools which include competency assessment and management systems, tailoring

IOSH approved courses as well as process safety and operations training. Accessing our services is easy. Come to us or we'll come to you. The team designs bespoke packages and delivers pre-packaged tools such as BLO and CRO awards. They've also been busy developing the exclusive PAAVQ-SET accredited L2 and L5 in the Principles and Practices of Process Safety Management. These qualifications enable sites to demonstrate that operators are applying process safety rather than simply demonstrating knowledge. Don't want to go off site? Then go to the iLearn online site. Click a button to access free and paid-for training courses. We can also develop online learning products bespoke to your organisation. Set your sites on safety with RTS.



Formed in 1998 by managing director Bob Thomson, Rhyal Engineering has rapidly grown to become one of the UK's leading site built storage tank contractors, dealing with design and build of new tanks, and the refurbishment of existing tanks. Specialist LNG tank fabrication and erection has recently been added to Rhyal Engineering's capability, along with construction of spheres, and special projects, such as moving of spheres and tanks. The company are currently undertaking a turnkey Biofuels project on 4 Terminals for a major oil company. The company also has pipework, mechanical installation, fabrication and shop built tanks and vessels divisions, and can therefore undertake a very wide range of projects and term contracts. The company serves the Oil, Biofuels Petrochemical, Aviation, Power, Water, Waste and Dock industries, and has undertaken a considerable amount of work for independent storage companies, as well as major companies in the above listed industries.

# CONCRETE CANVAS®

Concrete on a Roll



Winner  
Technical Innovation Award



Innovation Award  
ICE Wales Cymru Awards 2017



2014 Queen's Award  
for Enterprise in  
Innovation



**RAPID**

**EASY TO INSTALL**

**LOWER PROJECT COST**

**ENVIRONMENTALLY FRIENDLY**

Concrete Canvas® (CC) is a flexible concrete filled geosynthetic that hardens on hydration to form a thin, durable and water proof concrete layer. Essentially it's concrete on a roll.

CC is rapidly becoming the channel lining and slope protection material of choice for engineers and contractors around the world.

CC creates no rebound so can be installed around sensitive infrastructure, with man-portable batched rolls allowing concrete installation in difficult to access areas without the use of plant.

CC Hydro™ is a revolutionary containment product, combining the company's concrete filled geosynthetic technology with a high impermeability, chemically resistant geomembrane backing that provides a high performance liner with a testable joint for quality assured containment applications. CC Hydro™ removes the need for concrete, soil or aggregate top cover, normally required with conventional liner systems.

CC and CC Hydro™ are used within the Petrochemical sector to line and protect bunds, channels and slopes. The materials provide effective erosion prevention, weed suppression and protect against animal damage. CCH can be installed at rates of up to 800m² a day and is hydrocarbon resistant to BS14414, passing a 56 day immersion test at 50°C.

Concrete Canvas Ltd currently supply 7 out of the top 10 oil and gas operators worldwide, including Shell, Exxon Mobil, eni, Saudi Aramco, BP and Total.

Installation is easy, simply unroll the CC and...

# JUST ADD WATER

info@concretecanvas.com

www.concretecanvas.com



# ROSEN

empowered by technology

**Rosen Europe  
Stand 41**

ROSEN is a leading privately owned company that was established as a one-man business in 1981. Over the last 30 years, ROSEN has grown rapidly and is today a worldwide technology group that operates in more than 120 countries with over 2,700 employees. The key to our highly innovation driven approach is listening carefully to the specific needs and challenges of our customers. "Empowered by technology" is the promise that we at ROSEN systematically deliver by enhancing the operations of our customers and making them safe, cost-effective and more efficient. We are a worldwide provider of cutting-edge solutions in all areas of the integrity process chain suiting a wide range of industries: Oil & Gas, Energy, Process, Mining, Manufacturing, Telecommunications and Transportation for a wide range of assets, including pipeline, tanks and vessels as well as wind turbines, trains, telecommunication towers and many more.

**S**



**Scully UK Ltd  
Stand 46**

Scully prides itself on reliability and precision worldwide, providing the safest dependable solutions, protecting people and the environment. Inspiring to create fluid detection and handling systems, continuing to innovate and engineer through its exceptional 80 years industry experience. Commitment to excellence and commended for quality and longevity, affirming its role as global leader in safe and efficient product transfer with dedicated customer service, sales and technical engineer support. Scully products are utilised in many industries, where bulk fluids are stored or transported by companies in the petroleum, chemical, process industries, aviation, brewing, food, military, pharmaceutical and rail loading sectors.



**Stopford Energy & Environment  
Stand 53 (Platinum Sponsor)**

Stopford Energy and Environment is an international engineering, energy and environmental consultancy providing innovative multi-disciplinary solutions to a global market. For over three decades we have been serving the requirements of both SME's and multi-national clients from our team of industry leading experts. Our experience encompasses a breadth of sectors including Oil & Gas, Chemicals, Water and Waste to Energy. Stopford specialises in the provision of robust independent consultancy, analysis and advice. We strive to design environmental and safety risk out of our client's projects whenever feasible and to mitigate risk to the lowest practical extent. Our comprehensive service solutions include Feasibility, FEED, Detailed Design, Regulation & Policy, Health & Safety, Planning & Permitting, Client Owner Engineer, Environmental Assessments and Training. With activities across Europe, USA, Middle East and Asia Pacific, Stopford is one of

the leading energy and environmental consultancies in the UK.

**T**



**Tank Design House  
Stand 26**

The Tank Design House Ltd (TDH) provides engineering design and draughting services for the storage tank industry as well as other engineering sectors. TDH offers design and consultancy services across the world for various types of storage tanks and vessels. All design work is carried out in accordance with the latest design standards and repair codes such as EN 14015, API 650, EEMUA 159 and API 653. We have extensive experience in the design of new build tanks and also in the assessment of existing tanks for code compliance or change of service. We can produce all relevant calculations and detailed drawings for tank repairs such as tank jacking, shell repairs, re-floors etc. TDH uses a range of 2D CAD and 3D modelling software to deliver accurate, high quality design specifications. We also carry out finite element analysis for a range of engineering industries and applications. We offer customers direct access to our technical department enabling speedy and effective solutions to any engineering problem.

Exchangers, Condensers, Pressure Vessels, and Boilers. All of our staff receive extensive technical training and also bring many years of industry experience. All NDT Technicians are, as a minimum, Level II PCN in their respective fields, as well as having specialised EEMUA 159, API 653, API 570, and ASME, CSWIP, NACE Plant Inspection qualified staff. We provide a variety of site services including – all types of NDT, site surveys, written schemes, RBI, cleaning and repairs all supported with clear & concise reporting. Visit our stand to find out how we can help with your next inspection project.

**V**



**Viking Inspection  
Stand 52**

Viking Inspection offers a range of NDT testing services to include storage tank and pipeline inspections. Based in Grimsby, we have the capacity to carry out inspections across the entire UK and worldwide. The inspections can be conducted either in-service or out of service and can be from a simple ultrasonic thickness survey to a full EEMUA or API inspection, including corrosion/erosion rates, remaining life calculations and fitness for service statements. We provide a complete inspection service and our years of experience give our clients peace of mind that they are achieving industry standards. All of our technicians are Level II PCN, CSWIP, EEMUA and API qualified in relevant fields. Furthermore, our team and technicians are reputable for being highly conscientious and dependable and always thrive to provide the client with quality inspection results and reports.

**W**



**Wefco (Gainsborough) Ltd Services  
Stand 51**

Wefco has been established for over 40 years and have built a solid reputation for quality and reliability. We are a market leading privately owned UK company with product lines including site erected and shop fabricated storage tanks, pressure vessels, underground fuel storage tanks, refinery equipment and general fabrications. We also provide comprehensive scope of tank repair and refurbishment from initial testing through to re-commissioning. We have fully equipped in-house services enabling us to provide clients with effective design, quality engineering and efficient project management. Our aim is to achieve total client satisfaction on every project. Wefco offers a full design and construct service for tank repairs and refurbishment including tank jacking, floor repairs and replacement, shell repairs and reworks in accordance with API 653 and EEMUA 159 standards. Protective coatings, foundation repairs and pipework can also be provided if required.

# wood.

**Wood  
Stand 12 (Bag Sponsor)**

Wood is a global leader in the delivery of project, engineering and technical services to energy and industrial markets. We operate in more than 60 countries, employing around 60,000 people, with revenues of over \$10 billion. We provide performance-driven solutions throughout the asset life cycle, from concept to decommissioning across a broad range of industrial markets, including the upstream, midstream and downstream oil & gas, power & process, environment and infrastructure, clean energy, mining, nuclear, and general industrial sectors.

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**TesTex NDT  
Stand 42**

TesTex NDT is an inspection company based in Lincolnshire, working throughout the UK and abroad that uses specialised techniques to solve both unique and well understood inspection problems. As a company we have been established over 15 years' and have extensive experience using different techniques for the inspection of Storage Tanks, Pipelines, Heat

Y

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Yokogawa  
Stand 13

Yokogawa is a leading provider of industrial automation and control (AI), test and measurement and advanced solutions for operational optimisation. Combining innovative cutting-edge technology with project management, engineering and services; Yokogawa delivers field-proven operational excellence, safety and reliability throughout the delivery and post-implementation maintenance lifecycle. Yokogawa offers a wide range of industrial instrumentation, liquid and gas analytical and data acquisition solutions that ensure outstanding performance, precision, and long-term stability. Founded in 1915, Yokogawa engages in broad-ranging activities in the areas of measurement, control, and

information. The industrial automation business provides vital products, services, and solutions to a diverse range of process industries including oil, chemicals, natural gas, power, iron and steel.

Z

**Zerust®**  
**OIL & GAS**  
 WORLDWIDE CORROSION SOLUTIONS
Zerust Oil & Gas  
Stand 20

Zerust® Oil & Gas is a division of Northern Technologies International Corporation (NASDAQ: NTIC) that provides corrosion mitigation solutions and services to clients in the Oil & Gas and process chemical industries. Some of our oil and gas clients include BP, Chevron, Enbridge, Reliance Industries (India), Petrobras (Brazil), Shell (Malaysia), ADMA-OPCO and

FMC Technologies (USA). The team leverages NTIC's global network of trained corrosion management professionals and channel partners to deliver products, provide local support, conduct client training and participate in solution field trials. In addition, the R&D group works with companies like Chevron, Petrobras and Enbridge to develop specialized corrosion mitigation solutions and shared intellectual property (IP) technologies.



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Safe, reliable, efficient operations

ABB delivers high value consulting and lifecycle services to help companies in the global high hazard industries achieve operational excellence.

We offer expertise in the following areas: inspection, integrity management, maintenance and reliability, operational improvement, obsolescence management, process safety, project services, site and asset engineering, technical software and technical training.

Our team of experts implement solutions throughout the entire asset lifecycle and benefit customers by reducing risk, optimising cost and improving efficiency.

Visit us on stand 48. Discover more at [abb.com/oilandgas/service](http://abb.com/oilandgas/service)





Positive displacement foam mixing machine



Integrated water drive and foam concentrate pump



Uses firewater supply as power source



# Turbinator

## Foam Mixing Technology



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STAND

#61



Fixed



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## SIMPLIFYING HOSE ASSET MANAGEMENT



For over 27 years Kiowa Ltd has provided a range of hose, hose assemblies, fluid power products and services within the UK since being established in 1991 in Sleaford Lincolnshire. During this time, it has not only established long customer relationships within the oil and petrochemical industry sector but has also seen its Site Services division grow from strength to strength.

In today's competitive marketplace and focus on health & safety, Kiowa's range of Site Services programmes have evolved to not only support businesses with their purchase decisions but in creating tailor made services based on customer requirements and the latest legislation.

Kiowa's Preventative Maintenance Programme had been originally developed with customers to ensure all hoses and assemblies both on site and on trailers were managed and maintained correctly.

Customers could therefore:

- Identify costly problems before they occur.
- Reduce downtime from damaged equipment.
- Improve health and safety on site.
- Reduce spill and clean-ups.
- Increase the life of the hose assembly.

Many companies are still and have previously struggled with the management of their hoses currently in use, both on trailers and on-site, those that have failed Kiowa's stringent testing procedures and gaining access to detailed test certificates and the reordering of new hose assemblies.

After months of development and consultation with customers Kiowa has recently launched their own unique secure platform LONAN that allows customers accurate and up to date status of their hoses, with access to test certificates and details of failed hoses which is accessible anywhere and at any time.

Some of the benefits include improving site safety performance whilst reducing costs from unexpected downtime and loss of production. Managers are now able to track their company assets out in the field or on-site by giving each hose a unique reference for traceability or tracking the lifespan of assemblies through a planned maintenance routine carried out by Kiowa's trained on-site engineers. Once the servicing has taken place customers will be able to view pressure test certificates for 'New' or 'Retested Hoses'.

To find out more about how our Services team can help your site with products or services please contact [mike.vardy@kiowa.co.uk](mailto:mike.vardy@kiowa.co.uk)

Find out more about Kiowa Ltd at [www.kiowa.co.uk](http://www.kiowa.co.uk) or read our Smoke Signal Blog at [www.content.kiowa.co.uk](http://www.content.kiowa.co.uk)

**Lonan**  
Online Hose Management Portal



## DNV GL SYNERGI PLANT MODULE FOR RISK BASED INSPECTION OF ABOVEGROUND STORAGE TANKS

When we inspect tanks unnecessarily we put people in avoidable danger, environmental risks and costs rise and operations are negatively impacted. Is there a better way?

### Storage Tank RBI Software

DNV GL's Synergi Plant - RBI Aboveground Storage Tanks (AST) software is used by tank storage farms to optimise inspection strategies for storage tanks.

Storage tank farms spend between USD 2 and 3 million on each storage tank refurbishment, which can decommission a tank for 12 to 18 months during repairs and repainting. Storage tank inspections and refurbishment should be done regularly, but as they can have environmental consequences (toxic substances are released when the tank is opened) and can also represent a danger to workers, it is important that refurbishment is done when needed, not before. Some DNV GL customers have used the risk-based inspection methodology of Synergi Plant to improve maintenance strategy to an optimum level that reduces both costs and risk levels.

Atmospheric storage tanks (ASTs) in the oil, chemical and transportation industry are used to store flammable and toxic liquids. AST leaks can cause serious environmental problems if they reach surface or underground waters. Floor leaks may go undetected over long periods and can cause serious contamination of soil or sub-surface water. Rapid floor failure or catastrophic shell failure are rare events but they do occur and can have extremely serious consequences. Clean-up of the ground, groundwater and surface water are very costly operations.

Synergi Plant RBI AST aids decision making to determine how and when to do inspections and subsequent repairs. It offers detailed calculation of consequence of failure, probability of failure, financial risk, and inspection optimisation with quantitative modules.

Synergi Plant RBI AST supports both API 581 and EEMUA 159 RBI methodologies.

### Risk based Inspection according to API RP 580/581

API 580 is a recommended practice developed by the American Petroleum Institute (API) that outlines the basic elements for developing, implementing and maintaining an RBI program.

API RP 581 describes a specific quantitative RBI methodology with full details: data tables, algorithms, equations and models. The essential idea of RBI is to design an optimised inspection program that can reduce the risk of equipment failures and possibly reduce inspection and maintenance costs without compromising safety.

Learn more at:  
[dnvgl.com/synergirbi-ast](https://dnvgl.com/synergirbi-ast)  
or watch the webinar  
video:[dnvgl.com/rbi-ast-webinar](https://dnvgl.com/rbi-ast-webinar)

# MEET THE SPEAKERS

This year the TSA is pleased to welcome another fantastic group of industry speakers. These include professionals from various regulatory bodies, industry peers and government representatives, exploring a broad spectrum of topics including COMAH and analysis of past incidents.

All presentations will be available for download post-event from the website.



# MEET THE SPEAKERS



**Paul Thomas**  
Chair, Process Safety Forum

Paul joined the Royal Navy in 1963 and spent most of his 35 year career in submarines or submarine related jobs. His last appointment was as Chief Strategic Systems Executive with responsibility for procuring the TRIDENT submarines, their missile systems and the nuclear warheads. In 1998 he moved to AEA Technology, Nuclear Engineering, as Director Projects and subsequently as Director Strategic Development. Then in 2001, he joined BNFL as Group Director Environment, Health, Safety & Quality. He was Chairman of RSSB (Rail Safety & Standards Board Ltd) and the first President of the Nuclear Institute. He chairs The Process Safety Forum.



**John Leavens**  
Director, IHS Markit Oil Markets,  
Midstream & Downstream Consulting

John Leavens is a Director in the oil markets and downstream consulting practice of IHS performing a wide variety of assignments related to the petroleum market, refining and worldwide petroleum infrastructure. He joined IHS through the acquisition of Purvin & Gertz, Inc. in November 2011, which he had joined in 2008 and has gained extensive experience of techno-economic and strategic consulting assignments including specialising in supply chain and base oils and lubricants business. Prior to Purvin & Gertz, Inc., he started his career with Shell in both technical and commercial roles in Stanlow refinery UK, Shell Global Solutions in The Netherlands and in Downstream Supply Planning and Optimization in London UK. John has consulted on a wide range of assignments with IHS and Purvin & Gertz. He has broad experience in the technical and commercial aspects of the downstream oil industry with a particular speciality in refinery economics, downstream logistics, downstream markets, and base oils and lubricants.



**Sarabjit Purewal**  
Principal Specialist Inspector, Health  
and Safety Executive

Sarabjit leads an electrical, control and cybersecurity team in the on shore major hazards sector of the Health and Safety Executive (HSE). He is a chartered engineer, an associate of City and Guilds Institute, and member

of the Institution of Engineering and Technology. Sarabjit started his career with the CEGB in the electricity supply industry working on automation of conventional and nuclear power stations. He later worked with Kennedy and Donkin Consulting Engineers as the engineering manager of the Power Group, and then with Mott MacDonald as divisional director, before moving to the Health and Safety Executive working on various technical and policy issues.



**Dr Andrew Nixon**  
Senior Advisor, Environment Agency

Andrew is a Chartered Chemical Engineer and is currently a Senior Advisor at the Environment Agency where his portfolio's including COMAH and mining. In his current role he contributes to the development of COMAH Competent Authority regulatory strategies and procedures. With experience in research & development, operations and project management before joining the Environment Agency Andrew is now actively involved in many industry / regulator forums promoting good practice for environmental protection and works collaboratively with a range of partners within process safety in an advisory capacity.



**Tony Gower-Jones**  
Tripod Foundation

Tony Gower-Jones is a Senior director with a track record in Health Safety and Environment (HSE) management of high hazard, complex engineering, environments. (Shell over 20 years, Network Rail and Centrica). He has Led both corporate and operational departments in the Oil & Gas, Rail and Utility sectors. He specialises in the successful delivery of behavioural change at executive, management and work force levels.



**Ian Travers**  
Director, ITL

Former Deputy Director (Chemical Regulation) UK Health and Safety Executive. Ian has over twenty five years' experience in the regulation of chemical and major hazard industries and in the investigation of major

incidents to discover the underlying causes. He is an expert on process safety management, leadership and the establishment and implementation of key performance indicators for major hazard industries. I hold the Institute of Chemical Engineers' Franklin Medal for my outstanding contribution to Process Safety. Ian has a unique insight to how HSE, verifies risk management systems in the chemicals, oils, gas and other major hazard industries. Since 2015 working in the private sector Ian has worked with companies in the energy, chemicals and fuel sector to improve their risk management and asset integrity. This work has helped these enterprises focus on the most important and most vulnerable aspects of their risk management systems to ensure that they obtain exemplary levels of assurance that measures to prevent a major incident are delivering their intended outcomes. Ian has also worked closely with the World Bank on its economic and regulatory reform programs aimed at modernising the regulation of industrial and occupational risk in countries such as Moldova, Cameroon and Greece.

## PLEASE NOTE

All presentations will be available for download post-event from the website.

[www.tankstorage.org.uk](http://www.tankstorage.org.uk)



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Flotech Performance Systems has over 250 years of combined experience in providing Engineered Products and Solutions for the storage, transfer and distribution of liquid and gas products to the petrochemical and chemical industries.

Our core values are to continuously provide a superior quality. The services we offer include; design, consultancy, project management and site services including planned and reactive maintenance.



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Loading Solutions available for Chemicals, Fuels & Bitumen

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- Mother / Daughter Additive Systems
- Additive Injection and Blending Systems
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## VAPOUR RECOVERY

Vapour Combustion Systems include:

- Marine / Truck / Rail Loading Vapour Combustors
- Carbon Bed Vapour Recovery including Liquid-ring and Dry-Vacuum based VRU Systems
- Marine Vapour Recovery Systems
- VRU Maintenance & Servicing

## SECONDARY CONTAINMENT: BUND LINERS

**PA Geotechnical offers a lining service for secondary containment on tank bunds, earthwork and concrete.**

This loose lay application is suitable for both new build and refurbishment projects with a wide choice of materials for many applications on refinery and terminal infrastructure.

Due to the nature of materials and techniques used in application, it is possible to prefabricate considerable sections of the work offsite allowing for quicker and cost effective installation. Penetrations through the liner can be surveyed and measured, factory fabricated, positioned and welded on site.

The photographs show an installation on the Sevalco project refurbishing a bund. All seams are welded, the installation teams being directly employed and qualified, thus providing single line responsibility.

On this particular installation because of heavy rain pumping was necessary to catch the contaminated water. The installed liner had been effective in preventing contaminates passing under the bund walls to other areas.

Typically on petrochemical installations the geomembrane offered would be XR-5 manufactured by Seaman Corporation. However we are continuously reviewing the market to offer the widest choice of technically advanced materials available to us. This material has been used for

over 35 years on sites worldwide subject to the harshest weather conditions.

XR-5 is the highest strength and most chemically resistant fabric on the market, it was developed to contain and protect against acids, oils and a wide variety of contaminants.

Contact PAGEoTechnical Ltd  
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### CASE STUDY BITUMEN GANTRY

This Bitumen Loading Gantry is capable of blending up to 3 grades of Bitumen and delivering the finished product into road tankers.

The scope of supply for this project included;

- Flow Metering & Control Equipment
- Mass Meter Fault Alarm System
- 2x Dual Arm Loading/Blending
- Top Loading Vapour Return Unit
- Control Station



## Stopford Helps Clients Comply With New Duties Under DSEAR

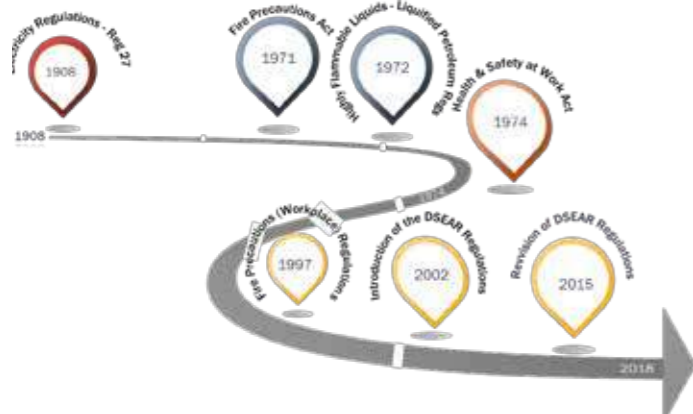
**Dangerous Substances and Explosive Atmospheres Regulations (DSEAR)** have been part of the UK's Health and Safety Legislation for over 15 years. Originally intended to reduce the risks of fires and explosions, the scope of the Regulations has been extended to cover other dangerous substances, including corrosive chemicals.

### Background

The DSEAR Regulations were introduced in 2002 to implement the European ATEX Directive and have become a major element of the UK's Health and Safety legislation. Their original intention was to reduce risks of "dangerous substances" causing fires and explosions.

However, since June 2015, changes to EU Directives have resulted in corresponding changes to DSEAR, which now cover other dangerous substances, i.e. gases under pressure and corrosive chemicals. These changes mean that employers need to consider the risks posed by the potential of the chemicals handled to corrode metals, their potential to react with other chemicals on site and the potential for harm related to the storage pressure of gases.

Substances which must now be addressed include chemicals such as caustic and acids, as well as gases under pressure. This extension to the legislation means that, for the first time, many tank storage sites will have obligations under DSEAR.



### Approach

For flammable materials such as petrol, diesel, combustible dusts, etc., the methodology for carrying out DSEAR risk assessments is well developed and accepted by Industry. The site must identify potential release points, define zones where explosive atmospheres may occur and then eliminate sources of ignition. When applied to gases under pressure or corrosive chemicals, an alternative approach is required.

Stopford have undertaken the required assessments using a combination of asset integrity and good practice for handling and storage of these materials.



### Stopford Methodology

Stopford have applied this methodology for the bulk storage of Sulphuric and Phosphoric acids, Sodium Hydroxide, Sodium Hypochlorite, etc. In addition, assessments have also been carried out for Chlorine and Oxygen gases stored in bulk under pressure. These assessments complement the existing hazard assessment techniques used routinely by Stopford (HAZOP, LOPA, FMEA, etc.) for a range of Clients in the Chemical, Water, Oil Storage and Waste to Energy industries.

As part of the methodology experienced Stopford personnel carry out comprehensive site surveys, using non-invasive techniques to review storage, pumping and conveying systems. Our assessment focusses on the suitability of materials used, potential for loss of containment, protective systems to prevent tank overflows, controls on tank filling, pressure control and pressure relief systems, adequacy of emergency procedures and management controls. The installations are then audited for compliance with requirements of relevant engineering standards, Industry codes, (e.g. BCGA Code of Practice for Cryogenic Liquid Storage at Users' Premises) and HSE Approved Codes of Practice and Guidance.

To find out more about how our team can be your partner of choice contact Heather Guanaria via;  
Web: [www.stopford.co.uk](http://www.stopford.co.uk)  
Tel: +44 151 357 7740 Email: [enquiries@stopford.co.uk](mailto:enquiries@stopford.co.uk)

## ALLIED Storage Tanks Limited

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T: +44 (0) 121 568 8166  
E: [sales@alliedstoragetanks.co.uk](mailto:sales@alliedstoragetanks.co.uk)



**ALLIED STORAGE TANKS** are pleased to be associate members of the **TANK STORAGE ASSOCIATION** and to have the opportunity to exhibit at this year's annual conference.

ALLIED'S wealth of knowledge and experience in replacing, demolishing or refurbishing STORAGE TANKS has provided stress free solutions to numerous repeat Customers seeking professional attention to their storage facility.

The ALLIED base is set ½ mile from junction 10 of the M6 in the heart of the midlands. Our 120,000 sq. ft. factory with its 16 overhead cranes upto 75 tonne capacity can pre-fabricate the largest tank that can travel by road. Bigger! We will come to site and custom build there.

### Our services include:

- Shop built tanks upto 240,000 litre capacity.
- Site installation of shop built tanks.
- Site built tanks upto 10 million litre capacity.
- Demolition and disposal of redundant tanks at site.
- Repairs to existing tanks.
- Refurbishment of existing tanks including increasing capacity.

All work carried out to code with required ndt inspection: BSEN14015. API650. API653. EEMUA159. BSEN12285. BS799.

Talk to ALLIED and you will know you are in safe hands.

# REVOLUTIONARY COMPOSITE HOSE BEND LIMITER



## P R E S S E R V

**Providing solutions for the most  
challenging tank storage  
corrosion issues**

**Composite Hose has found its place in the heart of both the shipping and storage industries fluid transfer processes. Its key benefit over alternative hoses and loading arms is that it is light weight, highly flexible and can be used for multiple purposes.**

Being manufactured from multi layers of thermoplastics and an inner and outer wire helix, the hose has a long shelf life and high safety factor. However, it still can be damaged. The majority of end users see the benefits of composite hoses outweighing the negatives and its worldwide usage is at an all time high.

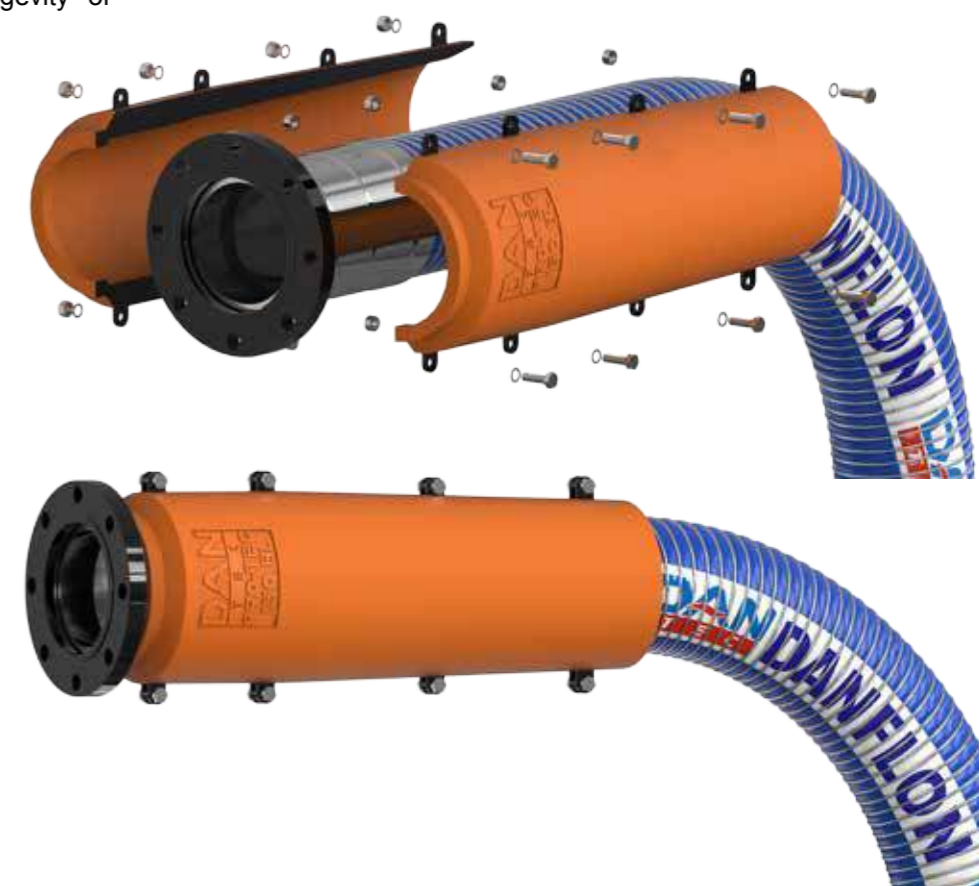
Dantec Limited, a world leader in composite technology, (who manufacture 100% of their hoses at their UK manufacturing site), always strive to put safety at the forefront of their products. To ensure safe practice and to add longevity to the hoses Dantec supply, a hose handling guide including storage, testing and inspection guidelines is included with every one of their large bore hoses.

Through market research and working closely with their end user customers and quality assurance departments, Dantec has found that 70% of composite hose failures are due to a lack of support at the critical termination point. This causes overflexing and bending of the hose in the transition area between the relatively soft and pliable hose wall and the hard end connection area.

Dantec is fully focused on developing a cost effective solution to increase the longevity of composite hoses for its users, with this in mind, Dantec has designed and developed the first ever Composite Hose Bend Limiter Dan Pro~Tec BL. This innovative product fixes to the outside of the composite hose on the first string at the Tank or ship side adding support to the hose, eliminating the overflexing and bending concern.

The product can be easily moved, stored and can extend the life of all hoses. It is initially available in 6", with an 8" version to follow and other sizes subject to demand.

Ross Lamb  
Dantec Limited  
[Ross.lamb@dantec.com](mailto:Ross.lamb@dantec.com)



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# JOIN US

If you're a terminal operator or you supply equipment or services to the bulk liquid storage sector, contact us to find out about the benefits of becoming a member of the TSA.

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[www.tankstorage.org.uk](http://www.tankstorage.org.uk)

## PROCESSING APPRENTICESHIPS FOR A SAFER FUTURE

In the high hazard sector, recent years have been bookmarked by a renewed focus on process safety, competency management and leadership. At the heart of this resides an increased reliance on plant and processes driven by people.

Great safety strides have been made; a snapshot of The HSE's stats playing testament to this. But what about tomorrow, and the day thereafter? Take a moment to ponder the technological advancements of the past decade. Then ask yourself where will things be in 2028.

The tectonic plates of technology perpetually shift under the feet of the people who man our plants and processes. Failing to adapt increases the risk of falling down. Of course, it's easy to profess the ideal of planning for a safer today, tomorrow.

But it begs the question: how? Competency must be ingrained into every inch of a bulk liquid site from boardroom to coalface, from personal safety to process safety tasks. It's a team effort.

And, as it's a collective coalition, let us not forget those young people entering our sector. As the existing workforce ages, the competency torch needs passing down. Creating a culture of competency should be circular. It's evolution through devolution. This means equipping them with the skills and ongoing competency training to drive a deeper understanding of the hazards, risks and controls in our process environment.

This level of risk awareness enables us to develop the standards that will help prevent and mitigate major accident hazards. And this is why apprenticeships have never been more important to the bulk liquid industry.

### Developing The Workforce, Developing Safety

Apprenticeships are key to the passage of knowledge: of embedding a behavioural safety culture deep within all rungs of an organisation.

Sure, conversation of apprenticeships has buzzed for years around the watercooler. But action still remains largely inactive. Embedding the philosophy of safer working underpinned with technical competence needs to take place at the entry point.

This is why Reynolds Training Services Ltd is working with Tank Storage Association, Cogent and The Oil and Pipelines Agency to develop the 'Bulk Liquid Terminal Technician Specialism' that has now been approved for use with the 'Science Manufacturing Technician Apprenticeship Standard'.

In a drive to underpin this Apprenticeship and Specialism

further, RTS is currently developing a new 'Level 3 Qualification: Bulk Storage Operator Technician', providing a route to Technical Recognition for the sector. The qualification gives a wider and more in-depth focus on process and occupational safety, human factors, emergency response and technical operations - in short, addressing the criteria of complex operations that now face operational teams.

### Pushing out the (apprentice)ship

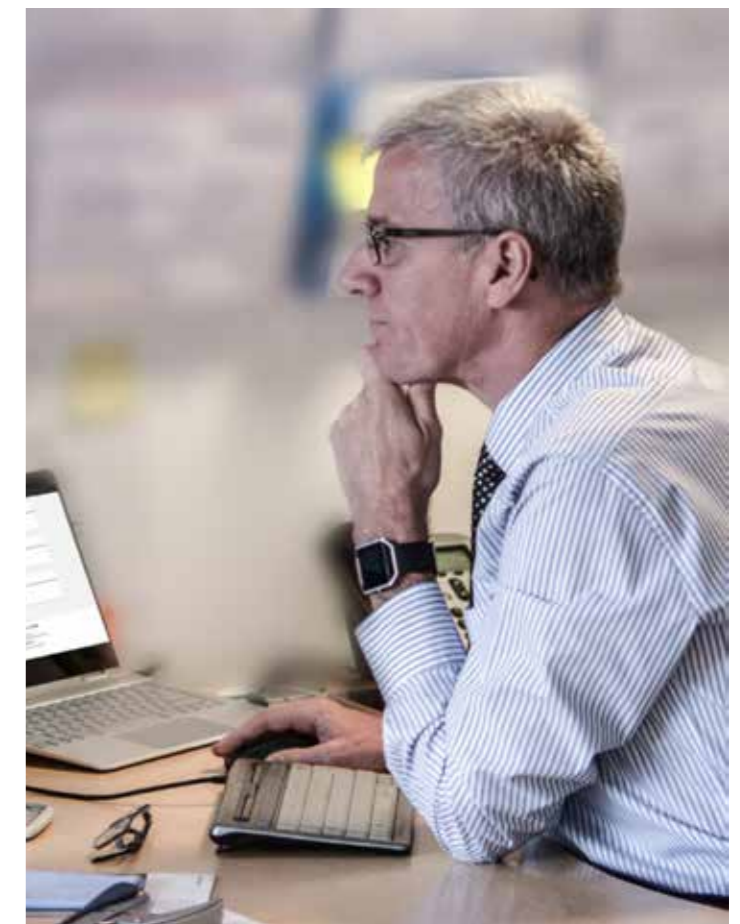
Apprenticeships are fantastic not just for the individual, but for industry and the wider economy. Investing early gives us the chance to embrace talented people, embedding the Knowledge, Skills and Experience needed to sustain and expand safe operations.

As the next generation takes the helm, there is an opportunity to reshape the future, challenging the old ways by deeply embedding the process safety culture into the mindsets of individuals and teams.

Apprenticeships open the door to cultivating a whole work-life approach to personal development.

*Authored by John Reynolds, managing director of Reynolds Training Services*

Visit for more: [www.reynoldstraining.com](http://www.reynoldstraining.com)





# BUSINESS RATES ADVICE FOR TSA MEMBERS

Business Rates, the commercial property equivalent of council tax, are a major outgoing for all TSA member clients. Specialist advice should be sought. A rates bill is a product of the Rateable Value (an estimated rental value, set by HMRC Valuation Office) and the UBR (multiplier). Unlike shops or offices, bulk liquid storage terminals are almost always owner occupied. So, with no rental evidence, other methods of valuation must be derived from the rateable value. The most common is a depreciated replacement cost approach, adding the land, and decapitalising using a set percentage to produce the rateable value. This method is known in the as the “contractor’s test” and perhaps unfairly as “the method of last resort”.

Rating Revaluations take place on a regular basis and so replacement costs need to be established for rating purposes. For the 2010 and 2017 Revaluations, tank costs were prior agreed under the UKPIA/Umbrella with HMRC Valuation Office. HMRC was also threatening to assess Internal Floating Rooves, which was prevented. A meeting was also arranged with the Conservatives in opposition to request a review of Plant & Machinery Rating, and address industry concerns about the rating approach to be adopted by HMRC Valuation Office. Farebrother expert, David McCausland, has been heavily involved in these tasks for over 20 years. Farebrother has been providing real estate advice and consultancy for more than 200 years.

David McCausland has a broad experience in all aspects of property and agency advice, having acted for a wide range of commercial and industrial clients. The CBI, via their Business to Business Guide, named him as one of a select few of recommended rating advisers for the 2010 Rating Revaluation. David is a member of the Rating Surveyors Association (RSA), the Institute of Revenues, Rating and Valuation (IRRV), and a member of the UK Petroleum

Industries Association (UKPIA) Rating Panel. He was also a guest lecturer for the RICS Rating Diploma course, which took place in the Farebrother offices on 12th July 2018, where he presented on the actual rating valuation procedure for a bulk liquid storage terminal.

## **Current Issue – Former Refinery converted to third party storage facility**

Rating issues involving a former refinery converted to become a bulk liquid storage terminal were considered in the recent Upper Tribunal (Lands Chamber) case Semlogistics Milford Haven Limited and Stephen Webb (Valuation Officer) of 28th March 2018. The court accepted that “the modern equivalent (terminal) would include construction of tanks with ADR/IFR (Aluminium Domed Roof/Internal Floating Roof) as opposed to EFR (External Floating Roof)”. A success for the ratepayer, the decision has national implications for all facilities where there are ADRs, so advice should be sought.

If you would like any advice please contact  
David on 020 7405 4545  
or email [dmccausland@farebrother.com](mailto:dmccausland@farebrother.com)  
[www.farebrother.com/team/profile/david-mccausland](http://www.farebrother.com/team/profile/david-mccausland)

## Farebrother



## FOOD AND DRINK sponsored by

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At this years’ Tank Storage Conference & Exhibition, the excellent catering staff at the Ricoh Arena are providing attendees with an inclusive buffet lunch as well as refreshment breaks throughout the day.

On arrival you will be welcomed with a breakfast selection of tea, coffee and danish pastries, followed by a mid-morning refreshment break at 11.30am.

Lunch will be served between 12.30 and 2pm and will consist of sandwiches and hot and cold buffet items. Catering is sponsored by **Aquilar Leak Detection**.

Mineral water will be freely available throughout the day.

The Tank Storage Conference & Exhibition organisers would like to take this opportunity to thank the Ricoh Arena for their fantastic service and assistance at today’s event.



## MENU

**Traditional Filled Sandwiches**

**Wokey Hole Cheddar and Red Onion Tart**

**Mini Greek Salad with Tzatziki**

**Homemade Scotch Egg with Chorizo and Smoked Pimento Aioli**

**Sweet Potato Wedges Roasted in Harissa**

**Raspberry Bakewell with Clotted Cream**

# MEDIA PARTNERS



## Storage Terminals Magazine

Published four times a year, Storage Terminals Magazine is the premium business magazine for executives, technicians, engineers and all professionals working in the global bulk liquids storage industry. Each edition focuses on a specific geographical area: Europe, North and South America, Asia, etc. In addition each issue includes news, developments on the industry and companies in the market, information and details on terminal expansion projects, updates of safety and regulations and feature articles on terminals and industry equipment and service companies.



## Tank News International

Tank News International is run by a group of established tank industry professionals and is the 'go-to' resource for those who work within the storage terminal, tank container, road tanker, shipping, port and rail industries. We bring our visitors news covering the entire tank storage and transport markets and welcome editorial submissions covering new product launches and enhancements, case studies, regulation changes, technical articles and company news.



## Hydrocarbon Engineering

Hydrocarbon Engineering magazine provides global coverage of the downstream oil and gas sector. As well as international oil and gas news, the publication provides regional reports, keynote articles from major oil and gas companies, technical institutes and industry commentators, and detailed technical articles about all aspects of the hydrocarbon processing sector.



## Hazardous Cargo Bulletin (HCB)

HCB was established in 1980 to help those involved in the transport and storage of dangerous goods to keep up to date with changing regulations. We continue to cover regulatory developments and to bring our readers news of products and services that aim to make their operations safer or more efficient. The magazine covers the transport of all kinds of dangerous goods, but particularly liquid chemicals, liquefied gases, explosives and radioactive materials. It covers transport by all modes: road, rail, maritime (bulk and packaged), inland waterway and air. Its coverage is also global in scope, covering not only North America and Western Europe but also the Far East, South-East Asia, Australasia, the Middle East, Africa and Latin America.



## Fuel Oil News

Fuel Oil News is the monthly magazine for professionals involved in the distribution, storage and marketing of fuel in the UK and Ireland. Established in 1977, Fuel Oil News has been reporting news from the world of fuel distribution every month for 38 years.



## Tank Storage Magazine

Tank Storage Magazine is published by Easyfairs UK Ltd. It is the industry leading publication reporting exclusively on the bulk liquid tank storage and terminal sector. Easyfairs deliver the world's largest portfolio of tank storage events, which take place in key bulk liquid storage hubs around the globe. Tank Storage Magazine is the official publication for all events—StocExpo in Antwerp/Rotterdam, Tank World Expo in Dubai, Tank Storage Asia in Singapore, and Tank Storage Germany in Hamburg.



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## Storage Industry Contacts

Years of hands-on industry experience

In-depth knowledge of industry publications and events

Providers of market intelligence

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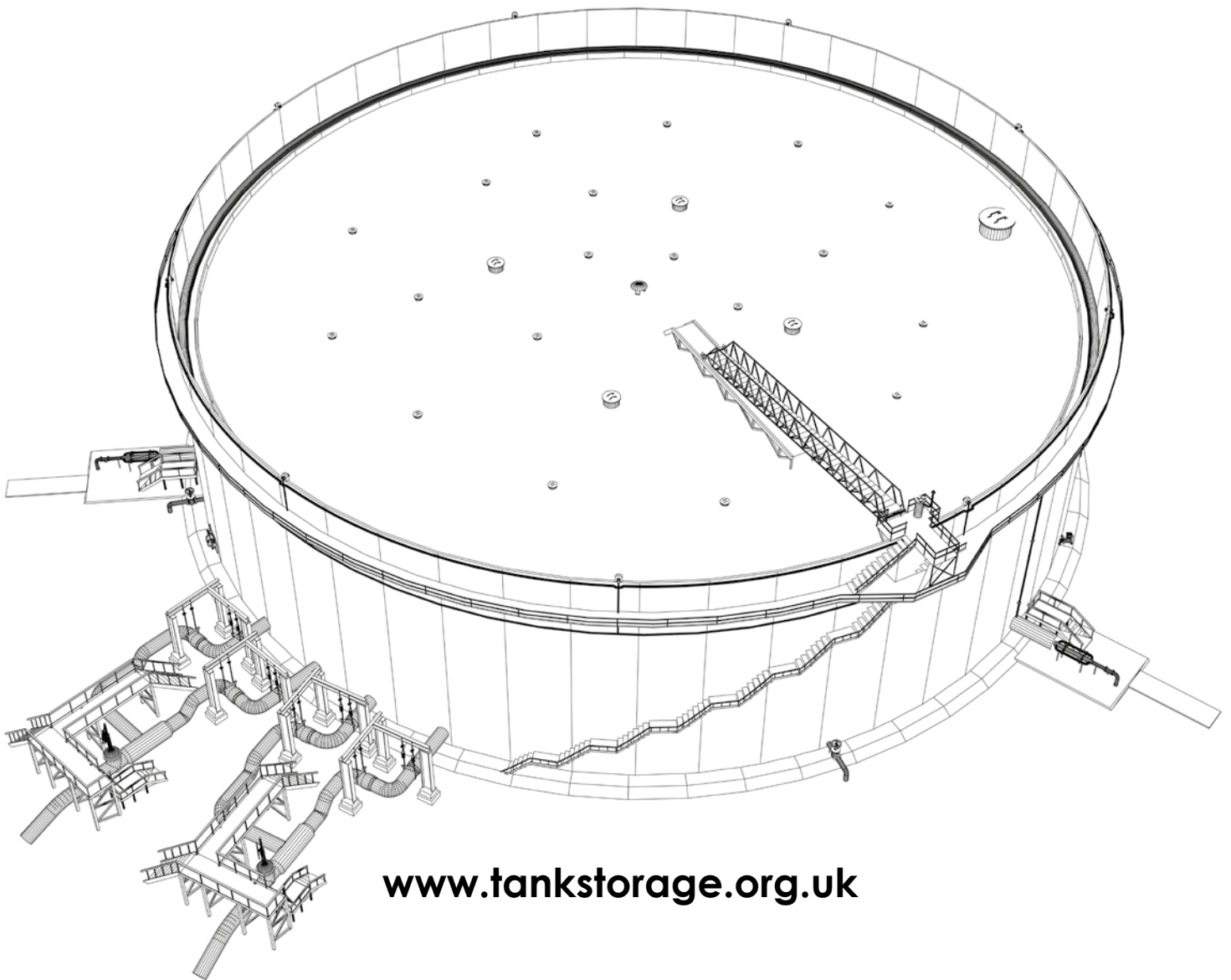
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