



# AVIATION FUELLING SERVICES

[www.penspen.com](http://www.penspen.com)



# OPTIMISING AVIATION FUEL SYSTEM PERFORMANCE

Penspen is a leading provider of engineering, management, and consultancy services to the energy industry. We offer complete, customised engineering solutions and help meet the world's evolving energy needs by providing our services and solutions across the entire asset lifecycle.

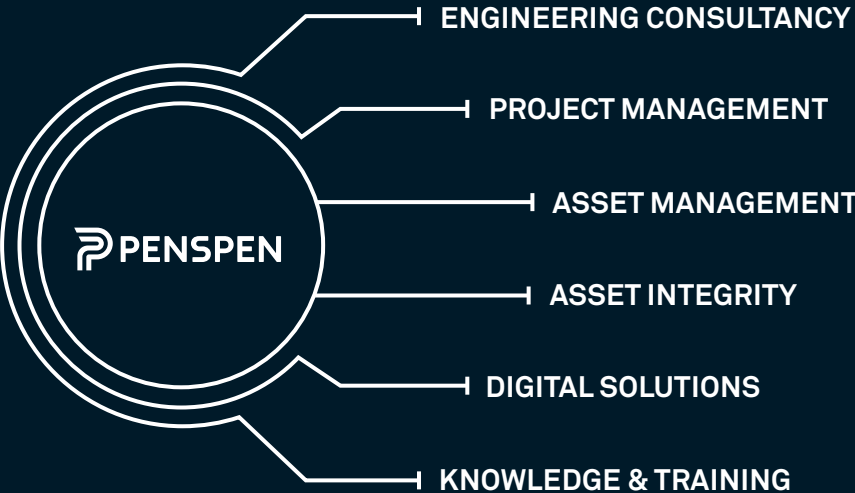
We support integrated aviation fuelling systems, including pipelines, fuel depots, hydrant distribution networks and associated facilities, to ensure uninterrupted, cost-effective operations.

Our track record ensures that airport operators, whether commercial or government, trust Penspen to deliver fuel transportation and storage services from concept to completion, and beyond.

- Fuelling Systems
- Distribution & Storage
- Low Carbon Fuels
- Engineering Consultancy
- Project Management
- Conceptual, FEED & Detailed Design
- Techno-Economic Studies
- Construction & Commissioning Supervision
- Integrity Management
- Facility Management
- Operations Services
- Procurement



# EXPERTISE ACROSS THE ENTIRE PROJECT LIFECYCLE



## COMMISSIONING AND FUELS MANAGEMENT, ST HELENA AIRPORT

St Helena is a remote island in the South Atlantic Ocean, 1850km off the west coast of Africa. An overseas territory of the United Kingdom and home to over 4,000 residents, previously the island was only accessible by ship in a journey that takes five days from South Africa.

Penspen were appointed as fuel management contractor for its new airport, responsible for managing, maintaining and operating the island's bulk fuel installation and the airport's fuel facility. This included procurement, shipment, storage and distribution of aviation fuel prior to completion of construction and commissioning, as well as development and implementation of an asset replacement scheme.



## PIPELINE MAINTENANCE, MANCHESTER JETLINE LIMITED

Over 55km of hired pipelines and facilities collectively known as the Manchester Airport Pipeline System (MAPS) are maintained by Penspen on Manchester Jetline's (MJL) behalf.

Operational since 1994, MAPS is the sole supply of aviation fuel to Manchester International Airport, substantially eliminating road tanker traffic around the airport.

Having designed and constructed the original pipeline, Penspen now ensures safety and integrity management of the day-to-day maintenance of MAPS, ensuring its continued integrity by drawing on our specialist technical consultancy services.

### EXPANSION OF PIPELINE INFRASTRUCTURE

When Manchester International Airport projected that it would require more fuel than the existing infrastructure could supply, Penspen was also commissioned by MJL to modify the installation to increase the flowrate of fuel to the airport, with the pipeline remaining operational throughout the works.





## UNDERGROUND TANK DESIGN, MIDDLE EAST

In order to facilitate future fuel demand at a major international airport, Penspen's client intends to execute strategic underground fuel storage tanks, adding an additional 192 million litres capacity.

Utilising Penspen's significant fuel farm experience in the Middle East, the client commissioned a 'first of its kind' front end engineering and design study, encompassing all services for the tanks, ancillary buildings and services infrastructure.

Following advanced geophysical, topographical and U/G detection studies, and adequacy checks for standalone systems, Penspen delivered a comprehensive report, including data sheets, specifications and material requisitions to enable our client to make informed decisions on this strategic project.



## EXPANSION OF FUEL FACILITIES, MIDDLE EAST

Our Sidara colleagues, Dar, were contracted as a main consultant on a major airport expansion project that would include two new terminals, new concourses and an increased cargo handling facility, ultimately increasing passenger handling capacity to 70 million passengers per year.

Leveraging the knowledge and expertise of the wider collaborative, Dar engaged Penspen as sub-consultants to prepare front end engineering design of the associated fuel farm expansion, taking into account assessment of future aircraft fuelling requirements. Following delivery of conceptual and detailed design, Penspen also provided construction management and supervision during the construction phase of the project.



## HYDROGEN FUEL STUDY, UNITED KINGDOM

Aviation plays a huge part in the path to decarbonisation. Penspen provided subject matter expertise on hydrogen safety at Inverness Airport as part of Project HEART, which aimed to explore how to improve the commercial and environmental operations of sub-regional aviation using green hydrogen and fuel cell electric power aircraft.

Utilising our global hydrogen knowledge, Penspen provided consulting services on the hazards which may arise from the introduction of hydrogen-based fuelling services (production, storage, handling, and dispensing), looking at their causes, consequences, and potential mitigation.



## MAXIMISING PERFORMANCE THROUGH DIGITAL TRANSFORMATION

# THEIA

Penspen's pipeline integrity management solution, THEIA, provides airport owners with better fuel system performance insights, faster.

Our next generation pipeline software solution enables operators to harness the full potential of real-time data, optimising performance of assets, accelerating assessments, and enhancing integrity engineering - in one powerful digital management tool.





# DESIGNING FOR A SUSTAINABLE FUTURE

Penspen is a proud member of Sidara, a global collective of leading specialist firms, and a leader in the planning design and delivery of airports and associated infrastructure systems.

Sidara's 19,000 visionaries, thinkers, and innovators from over 300 offices across 60 countries have impacted over 300 airports across six continents, and offer clients a broad range of services uniquely positioned to deliver comprehensive and collective solutions for the world's biggest, most ambitious, and most critical challenges.





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