

## Manufacturing expertise

With a rapid changeover approach, we focus on high variety, low and medium volume production. Working with electronic, mechanical, cable and acoustic assemblies, we have a history of complex repair work and new manufacture.

Our specialist and multi-skilled staff carry out a broad range of assembly, wiring, and test functions offering customers unique expertise in manufacture for the maritime environment, including:

## Moulding

Moulding facilities for transducer manufacture and the production of watertight cable glands include urethane and epoxy encapsulation, polymer overmoulding, plastic extrusion and injection moulding.

## Cables

We offer dedicated facilities to test cable termination, splicing and weld repair work for mechanical strength and electrical integrity.

## Testing

Hydrostatic testing ensures all items resist fluid penetration at varying pressures. Using automatic test equipment we can fully test further termination and penetration work for continuity, conformity and ionisation. Complementing our design and development capability, our anechoic test facility and automated test equipment ensure consistency in transducer production.

## Transducers

Our extensive range of specialist facilities for the manufacture of transducers includes: controlled environment assembly areas, ceramic cutting and grinding, vacuum chambers and consolidation ovens complemented by a range of moulding and test facilities.



## Spares & Repairs

Supporting the availability of sophisticated operational equipment is an important element of our business. To achieve this we provide a rapid response to requirements for spares, repairs and refurbishment of electronic and electro-mechanical assemblies, mechanisms and transducers. Quality of electronic systems is ensured by on-site PCB fault finding and repair.



### Head Office:

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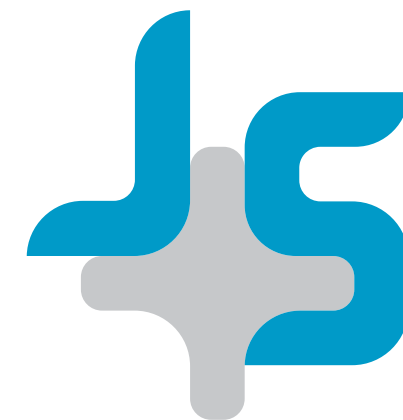
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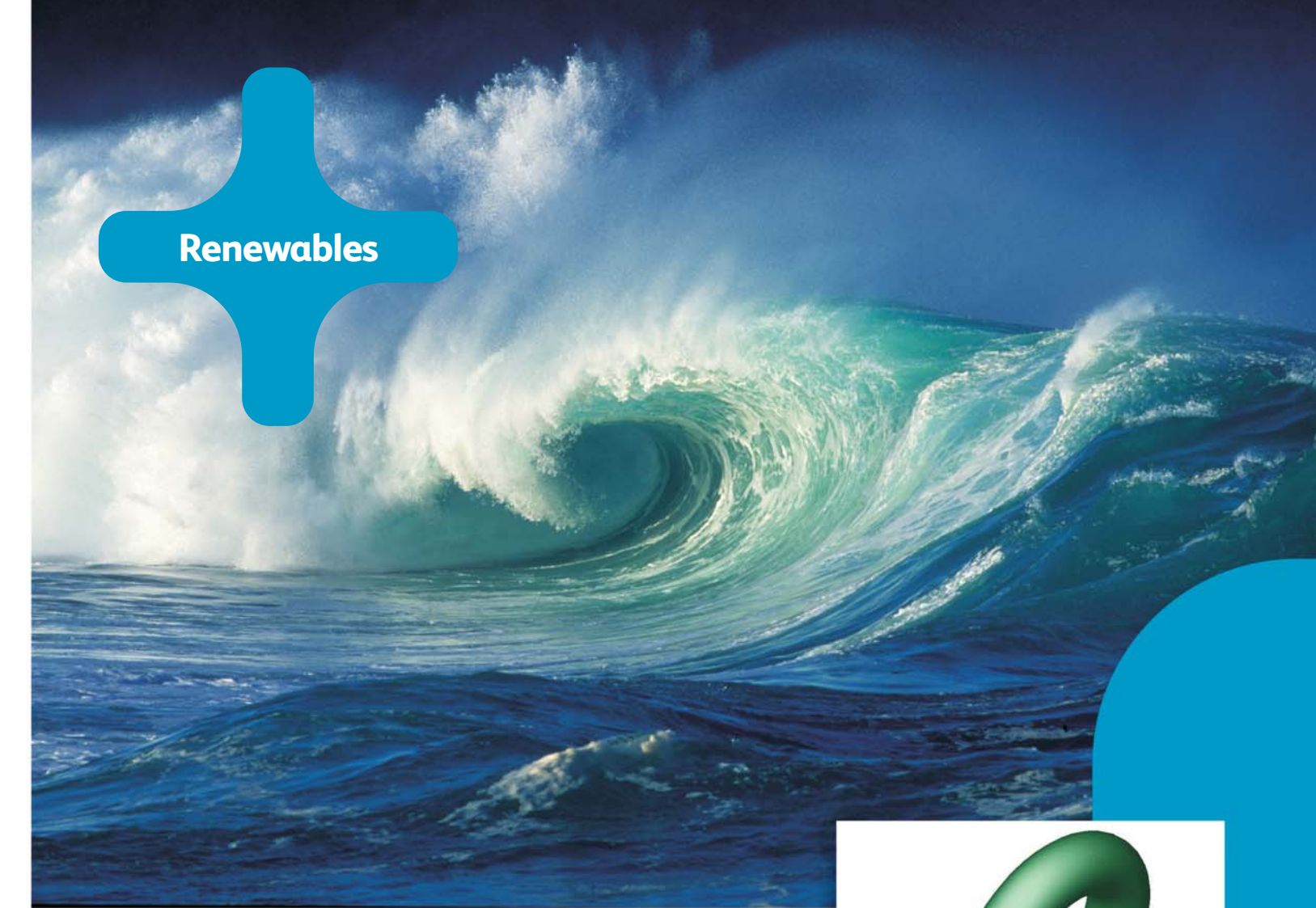
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## Renewables



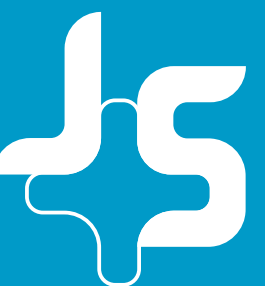
## Engineering and equipment support solutions.

With more than 50 years experience providing independent engineering services to the Royal Navy supported by 10 years providing services to the Oil and Gas industry, we are now applying our proven, reliable and cost-effective solutions to the Marine Renewables energy market.

Using the full breadth of our system, mechanical, electronic, software and acoustic engineering skills, we provide solutions to a range of subsea control system, monitoring and evaluation requirements in the Marine Renewables sector.



**J+S Limited**



## Engineering Expertise

J+S approaches customer problems with a comprehensive mix of engineering disciplines. Our responsive, agile and proactive team of in-house specialists and skilled technicians deliver innovative solutions to complex requirements through:

### Systems Engineering

Following a strong 'systems' approach, our engineering experts work closely with customers to understand their requirements and develop robust design architectures. Our qualified systems engineers use DOORS to capture, track and provide verification traceability of requirements.

### Electronic Engineering

**Digital Electronic Engineering**  
Highly skilled in microprocessor technology, our designers use the latest FPGA, BGA and DSP devices and work in a range of firmware description languages.

**Analogue Electronic Engineering**  
Through expertise in low noise pre-amplifiers and power amplifiers, we use off the shelf control systems to complement bespoke design. We apply electromechanical sensors, drives and control electronics to develop complete systems.

**Electronic Enclosure Engineering**  
We develop complex electrical designs for cabinets, including EMC, interface and power supply specifications.

**High Voltage Electronic Engineering**  
Design up to 33kV is an integral part of our electrical engineering work.



### Software Engineering

**Embedded Software Engineering**  
Real time embedded software design is fundamental to our projects; we design to Board Support Package (BSP) level, using a variety of programming languages.

**Human Computer Interface**  
Our experienced Programmers understand the importance of designing user-friendly interfaces for our projects.

**Network Engineering**  
Our unique understanding of military network engineering means our extensive skills can be applied over a range of development projects.

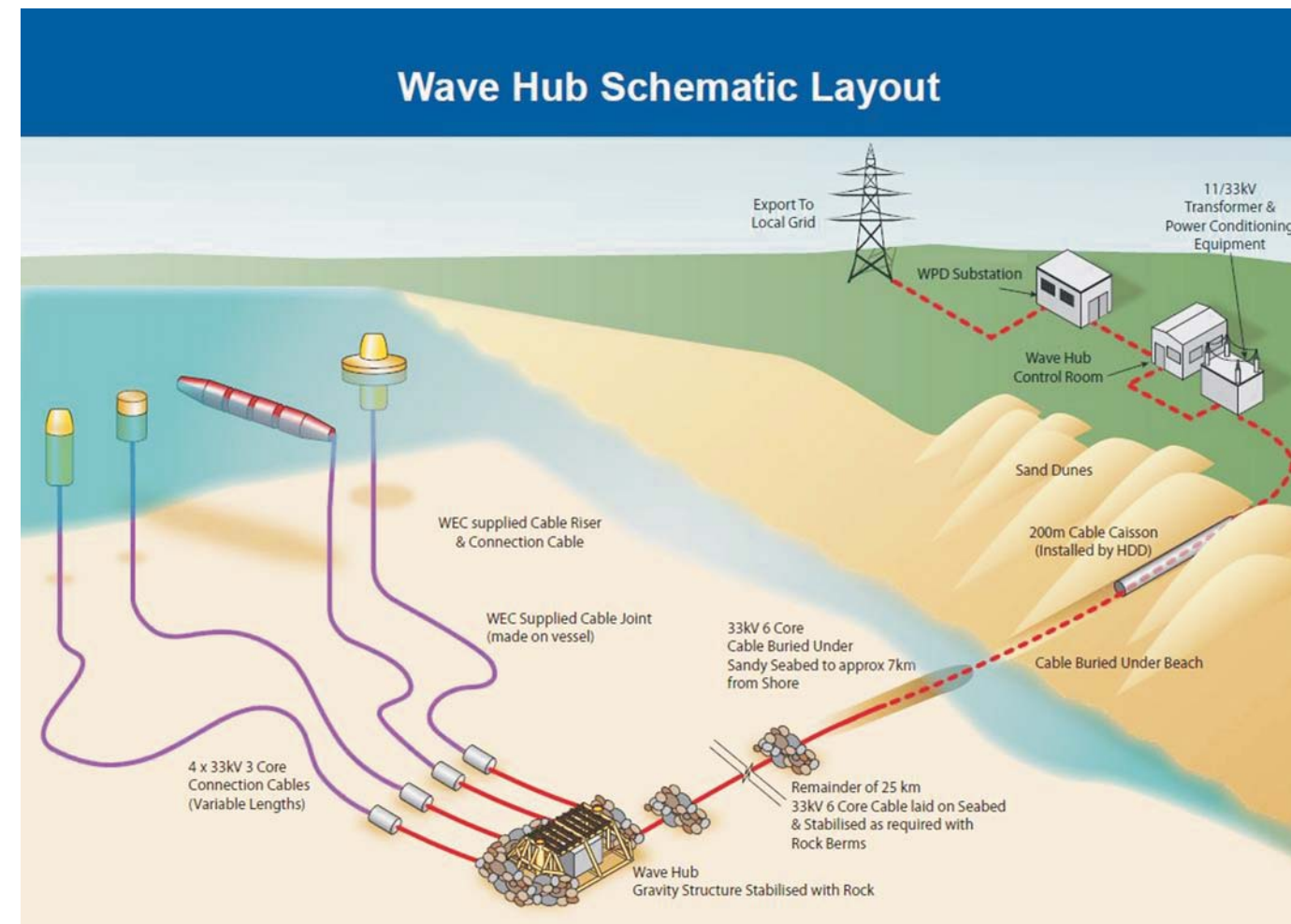
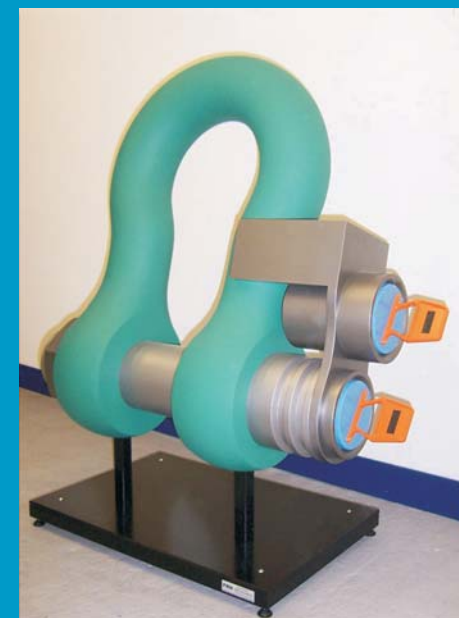
### Mechanical Engineering

**Structures**  
From complex missile test stands to equipment enclosures, we design and develop a range of structures and cabinets to meet stringent requirements and withstand various harsh environments.

**Design Draughting**  
Proficient in Solidworks, our design team is familiar with military drawing package requirements.

### Materials

With extensive knowledge of material properties for above water and underwater equipments, our specialists design and develop tools for hot and cold moulding processes.



### Products and Services

Our particular areas of expertise are the development and manufacture of subsea solutions for medium voltage connectivity, mooring line load measurement, system monitoring and evaluation.

### Support Services

Supporting the Royal Navy's operational equipment for several decades has earned J+S an enviable reputation for the cost effective delivery of equipment availability, a reputation that has been carried through into the energy sector.

A broad range of engineering expertise combined with our established offshore support capability places us in unique position to offer a complete engineering service from front-end design through to offshore installation, acceptance and repair.

Providing operational support services including rapid-response offshore support to the UK and overseas in areas including:

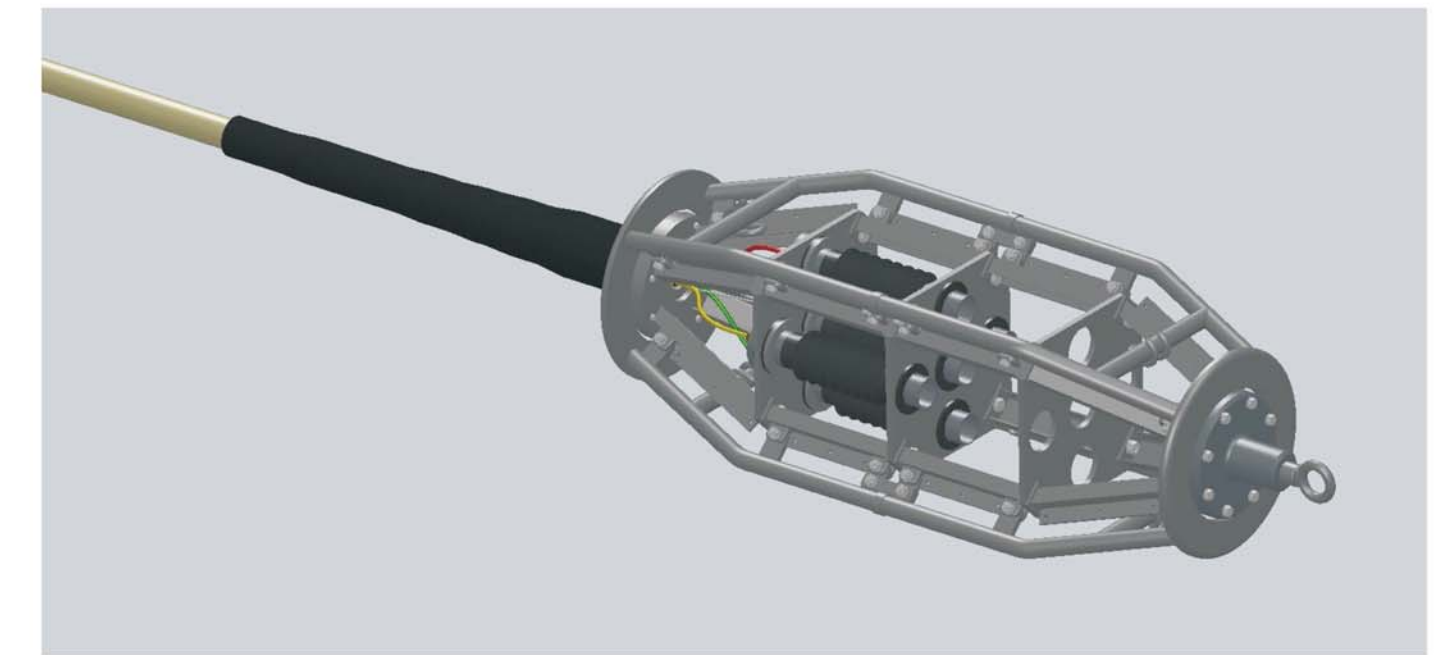
- Subsea low, medium and high voltage power distribution and connections
- Subsea asset management
- Technology Insertion
- Umbilical diagnostic and repair
- Production cable jointing

Umbilical services include fault diagnostics, repair and replacement of umbilical connections and terminations.

All offshore support staff technicians are trained in the accepted techniques of electrical cable jointing, working with and on behalf of the major cable OEMs and Oil Companies.

Project Management and support contracts for major Oil Companies cover subsea and control system engineering support, materials management, storage and maintenance.

Our 24/7 service coverage for all products and systems operating within a client's asset base covers engineering back-up, breakdowns, repairs, replacements, installation and testing.



### Moulding and Encapsulation

Applying extensive expertise in the design of moulds and mould tools, we use state of the art thermoplastic injection moulding techniques to produce high reliability cable terminations, splices and specialist mouldings to meet stringent design requirements.

### Transducers and Hydrophones

Through our extensive transducer design and manufacturing capabilities we offer a range of sonar transducer products; from single elements and bespoke design to technology insertion, we are able to meet customers specific requirements. We are proficient in a broad spectrum of transducer configurations including; Cylindrical, Spherical, Tonpliz, Composite, Barrel Stave, Plane, Line and 3D arrays.



### Obsolescence Management and Technology Insertion

Backed by decades of obsolescence management experience, J+S continues to support subsea systems and equipment that has been in service within the Oil and Gas industry since the 1970's.

Applying a broad range of capabilities, our customers rely on our cost-effective responses to obsolescence problems. We are able to undertake bespoke obsolescence studies, pro-active monitoring and reporting, evaluation of identified obsolescence, cost-benefit assessment of candidate solutions and implementation of long-term support.

Our varied approach to obsolescence includes technology insertion, identification and sourcing of alternative components, lifetime buys, modifications to assembly components and reverse engineering.

Our designs incorporate future proofing features to mitigate future obsolescence, and are supported by robust procurement and supply chain relationships.