

West Cumberland Engineering Ltd

## West Cumberland Engineering.

WCEL

#### A proud member of the Shepley Group

West Cumberland Engineering are a well-established and experienced fabrication company focusing on the manufacture and installation of high quality welded fabrications such as process pipework, tanks, vessels, modules, waste containers and high integrity ductwork mainly for the nuclear and petrochemical industries.

## Developing high performing people, building a legacy of excellence.



#### About us.

West Cumberland Engineering are a well-established and experienced company, with thirty years' experience focusing on the manufacture of high quality fabrications. We are renowned for providing exemplary, bespoke solutions and working to our clients' precise specifications and requirements. We have been recognised for our dedication to safety and quality standards, recently being awarded a President's Award for achieving ten consecutive RoSPA Gold Medal Awards.

Our management and workforce have decades of experience in delivering Class A welded fabrications constructed within the highly regulated environments of the nuclear and petrochemicals industries, including but not limited to; process pipework, tanks, vessels, gloveboxes, modules, waste containers and high integrity ductwork. We have an extensive range of capabilities and services such as welding, cutting, forming, machining, inspection and non-destructive testing across our four workshops, working with a wide array of materials in thickness ranging from 0.5mm to 200mm.

In October 2023, WCEL acquired T.I.S. Cumbria Ltd, a local leading nuclear fabrication specialist based in Workington. The acquisition doubled the workshop capacity and increased crane capability, ensuring that WCEL can not only continue to deliver its current workload, but expand its capacity for new and existing clients, supporting nuclear decommissioning, nuclear new build and SMR's. We now have circa 10,000m<sup>2</sup> of manufacturing workshop capacity.



## **Our vision**

Continue to develop high performing people & strive to build a legacy of excellence within our sectors.

As of December 2023





Professional Team

### Our team in numbers



## Our values, vision and ethos are at the heart of what we do.



## **Our ethos.**

Whether we're working alongside our Group members or operating independently, our culture remains consistent. We put our clients first, supporting their business needs and delivering engineering solutions with commitment, care and consideration. Long term relationships are key to our business model and our people are at the heart of everything we do. Our high performing employees dedicate themselves to delivering customer requirements and we promote an environment that stimulates diversity, innovation, teamwork and continuous improvement.

West Cumberland Engineering are committed to manufacturing within industry specifications and to the standards set by our clients and the industries they represent. We have been recognised for our dedication to adherence, recently being awarded the ROSPA Gold Medal Award and the first in the country to be awarded the Approved Supplier Certificate (Build 1) from Sellafield Ltd.



With decades of fabrication experience within the nuclear and petrochemical industries, we are able to offer services such as welding, cutting, forming, machining, inspection and non-destructive testing, working with a wide array of materials in thicknesses ranging from 0.5mm upwards.





### **Committed to Right First Time**

We have a passion for accuracy and getting it right first time, every time.

Our teams work diligently to implement our proven processes and procedures throughout the lifecycle of a project, and by doing so we believe we provide excellence by all of our people throughout our organisation.

## The core values of our group »



#### We are customer focused

Our business model is based on a partnership with our customer to ensure that every interaction is intended to support the customer which in turn assists our business to learn and grow. Our organisation thrives from successful delivery for our customers, we make every decision and measure every outcome based on how well it serves them.



#### Our people are key to our success

Our employees and the relationships developed over time are the beating heart of West Cumberland Engineering and this significantly contributes to our ongoing success. We continually develop our employees to enable them to achieve their full potential and have a proven history of internal progression.

2

#### We are proactive and adaptable.

Our success stems from the ethos across the business to drive projects and achieve positive outcomes for our customers and partners.

Our agile structure allows us to quickly adapt to situations and respond positively to our customers needs whilst continuously looking for ways to improve what we do.

## What we do.



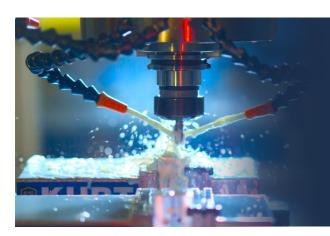
#### **Pipework**

Over our history we have earned a reputation within the industry for delivery of high integrity, complex fabricated pipework spools and piping systems. Our customers look to us for solutions and early contract involvement covering a diverse range of process plant applications focussed on but not limited to nuclear, chemical, oil and gas sectors

#### Welding and Fabrication.

We are renowned for providing high quality bespoke solutions, working to precise specifications to achieve our clients' individual requirements - including complex, high integrity fabrications to exacting standards. We produce a diverse range of products manufactured from numerous common and rare materials





#### **Precision Machining**

We have in-house machining capability that provides precision machining, assembly and testing - enabling us to provide a fully developed manufacturing process. We are adept at upgrading existing clients components to new, more effective solutions

#### Tanks and Vessels.

We supply pressure vessels, tanks, heat exchangers, condensers and pipe systems to the UK nuclear industry. Equipment is manufactured to the highest specification, ensuring all technical and safety aspects of each project are followed



#### Volume Manufacturing.

As part of our Cumbria Manufacturing Alliance joint-venture with Bendalls Engineering we are venturing into highvolume manufacturing. We have recently secured the 63 Can Fuel Racks project, manufacturing 80 racks for use on the Sellafield site. We are currently developing volume manufacturing processes to ensure most efficient turn around of large order parts or products, and look to deskill the processes and increase technical solutions that will increase efficiencies reducing costs.



#### Gloveboxes.

We have an array of experience in manufacture, end user trials and commissioning of glove boxes, isolators and containment enclosures for applications requiring enhanced protection, with adaptable safety levels and tailor-made designs. We also provide manufacturability assistance with design via early contractor involvement providing our extensive knowledge and experience. The Gloveboxes allow operators to handle hazardous material with high levels of dexterity in a safe and controlled environment.

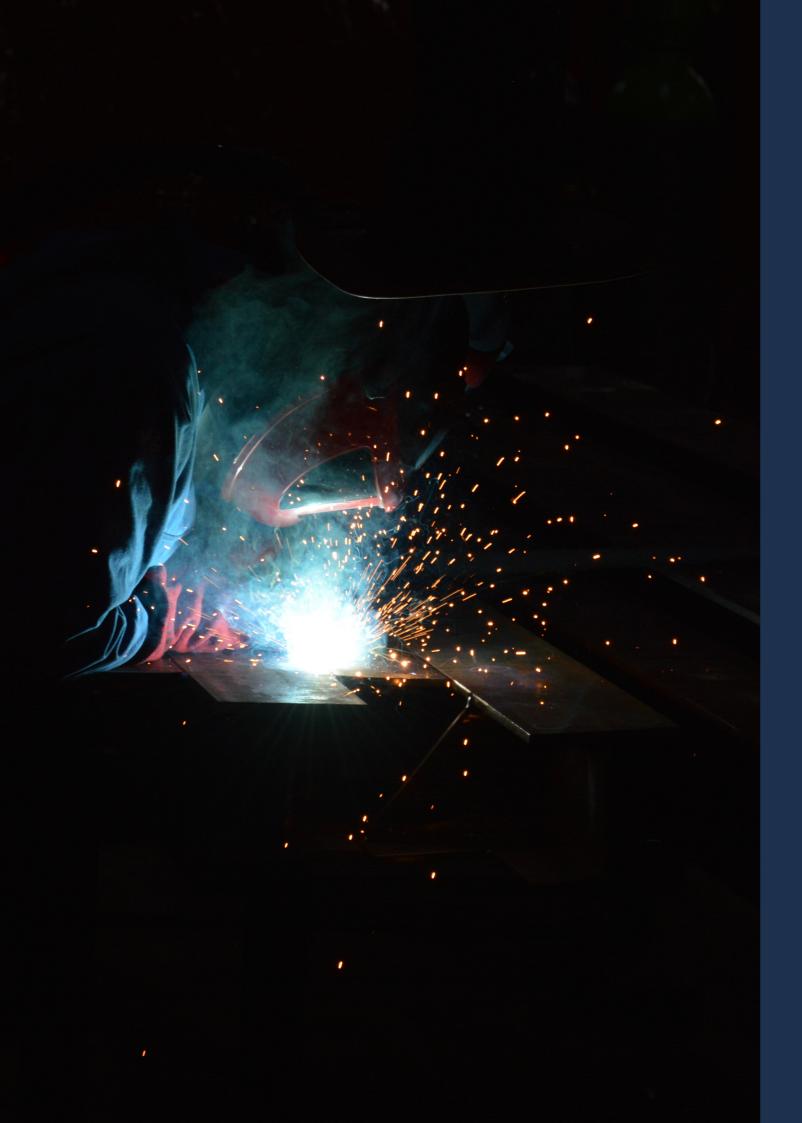


#### HVAC.

We manufacture and test complex high integrity containment systems that filter contaminated air to ensure the safety of those working in the most hazardous plants on the Sellafield site.

The scope can include all plant & equipment ranging from HEPA filter banks, air handling units, fans, extract cabinets, dampers, stainless steel ducting and impellors.





## Accreditations.

ISO 3438-2 Quality Requirements for the Fusion Welding of Metallic Materials

Sellafield Certificate of Approval

BS EN ISO 14001 Environmental Management

#### EN 1090-2

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Fabricated Steel Components for use in Building and Construction up to EXC 4

So 9001 Quality Management

# Specifications.

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Detailed below is a comprehensive list of the Standards and Specifications that we work to;

#### Welders

BS EN 287-1: Qualification of Welders – Fusion Welding: Steels BS EN ISO 9606-1: Qualification of Welders – Fusion Welding: Steels BS EN ISO 9606-2: Qualification of Welders – Fusion Welding: Aluminium

#### ASME

ASME B313.3: Process Piping ASME VIII: Boiler & Vessel Code

#### **Nuclear Specific**

ES\_0\_5391\_2: Fabrication of Plant & Equipment (Stainless Steel) – Builds 1 & 2, Pipework; Build 1, Tanks; Builds 3 & 4, Pressure Vessels and Heat Exchangers ES\_0\_5393\_2: Fabrication of Plant & Equipment (Stainless and Carbon Steels) – Builds 3 to 6, Pipework ES\_0\_5394\_2: Fabrication of Plant & Equipment (Stainless and Carbon Steels) – General Duty ES\_0\_5395\_2: Fabrication of Plant & Equipment (Nickel Alloys)

#### **Weld Procedures**

BS EN ISO 15614-1: Qualification of Welding Procedures – Arc Welding: Steels and Nickel Alloys BS EN ISO 15614-2: Qualification of Welding Procedures – Arc Welding: Aluminium BS EN ISO 14555: Arc Stud Welding of Metallic Materials

#### **Welding Processes**

111 MMA (Manual Metal Arc Welding)
121 SAW (Submerged Arc Welding)
131 MIG (Metal Inert Gas Welding)
135 MAG (Metal Active Gas Welding – Solid Wire)
136 MAG (Metal Active Gas Welding – Flux Cored Wire)
141 TIG (Tungsten Inert Gas Welding – Manual)
141 Orbital TIG (Tungsten Inert Gas Welding – Liburdi Diametrics/AMI Arc)
141 Semi-Automatic TIG (Tungsten Inert Gas Welding – TIP-TIG)
783 Drawn Arc Stud Welding with Ceramic Ferrule

#### Inspection

All inspection personnel carrying out visual inspection and non-destructive testing are qualified to one or more of the following recognised certification schemes; PCN Level 2, CSWIP 3.1/3.2 and ICorr Painting Inspection Level 1

#### **Non-Destructive Testing**

Visual Inspection Ultrasonic Testing Radiography Liquid Penetrant Testing Magnetic Particle Testing

#### **Cutting Processes**

Air Plasma 1: up to 12mm Air Plasma 2: up to 38mm Oxy-propane/acetylene cutting Reciprocal Saws Guillotine 1: Width 3m, 12.5mm C/S 8mm S/S Guillotine 2: Width 2.5m, upto3mm Pipe Cutter: Square cut, up to 80NB 3D and 4D

#### **Forming Equipment**

Break Press: Width 3.1m, 150 Ton Plate Rollers: Width 3m, 3-20mm Pipe Bending: 15NB to 50NB

#### **Jigs / Fixtures**

Rotary Manipulators (various sizes) Column and Boom: 4m x 4m, Vessel/Tank Rollers: 20 ton, Width 3m

#### Materials

Austenitic Stainless Steels (NAG, 304L, 316L, 316Ti, 321, 18-13-1, 235MA, 254SMO, Nitronic 60) Precipitation Hardened Stainless Steels (17/4 PH, FV520B) Martensitic Stainless Steels (S416S21) Duplex Steels (2205, Ferralium 255) Nickel Alloys (NiCu) Aluminium (6086 T6, 5083) Quenched and Tempered Steels (Dillimax 890T) Carbon Steels (S275/S355J2/S460, API 5L) Dissimilar: Combinations of the above materials



# **Our Capability.**

			Lathes			
Manual/CNC	Model	Spindle Bore	Bed Length	Swing Over Bed	Swing Over Cross Slide	Swing Over Gap
CNC	XYZ 555 PROTURN	Ø104MM	3000MM	Ø560MM	Ø350MM	Ø780 x 227MM
CNC	XYZ 555 PROTURN	Ø104MM	2000MM	Ø560MM	Ø350MM	Ø780 X 227MM BACK
CNC	XYZ 425 PROTURN	Ø80MM	2000MM	Ø480MM	Ø257MM	Ø700 X 170MM
CNC	XYZ 410 PROTURN	Ø80MM	1100MM	Ø480MM	Ø280MM	N/A
CNC	XYZ 1630 PROTURN	Ø54MM	760MM	Ø400MM	Ø218MM	N/A
CNC TURNING CENTRE	HYUNDAI	Ø63MM	500MM		Ø250	Ø600 X 140mm BACK
Ø280MM MAX CUTTING DIA	N/A	N/A	1500mm	Ø420	Ø250	Ø600 X 140mm BACK
MANUAL	HARRISON 400	Ø66MM	1500MM	Ø420MM	Ø250MM	Ø600 X 140MM BACK
MANUAL	HARRISON 500	Ø80MM	2000MM	Ø540MM	Ø370MM	Ø720MM
CAD CAM SOFTWARE	ONE CNC					
XR9 PRO+4AXIS (3 SEATS)	N/A	N/A	N/A	N/A	N/A	
CAD CAM SOFTWARE	DOLPHIN CAD CAM	N/A	N/A	N/A	N/A	N/A

			Milling				
Туре	Manual/CNC	Manufacturer Model	Max Table Load	X-axis	Y-axis	Z-axis	4th Axis
TRAVELLING COLUMN	CNC	CORREA FENIX	15000 KG	7500MM	1500MM	3000MM	
BED MILL	CNC	MTE KT4200	11000KG	4000MM	1500MM	2000MM	N/A
BED MILL	CNC	MTE BF-3200	10000KG	3000MM	1000MM	1000MM	N/A
VERTICAL MACHINING CENTER	CNC	XYZ 1100 HD + 4TH AXIS	1500KG	1100MM	610MM	610MM	CHUCK Ø190
SWING OVER BED Ø280MM	CNC	XYZ1010 VMC	450KG	1010mm	500mm	520mm	N/A
VERTICAL MACHINING CENTER	CNC	XYZ1020	800KG	1020MM	520MM	546MM	N/A
VERTICAL MACHINING CENTER	CNC	XYZ 1010 VMC	450KG	1010MM	500MM	520MM	N/A
VERTICAL MACHINING CENTER	CNC	XYZ 710	N/A	800mm	345mm	406mm	N/A
+ 4TH AXIS	500KG	710MM	450MM	510MM	CHUCK Ø190	406mm	N/A
SWING OVER BED Ø380MM	MANUAL	HURON MU6	N/A	1500mm	700mm	550mm	N/A
VERTICAL MACHINING CENTER	CNC	XYZ 710	500KG	710MM	450MM	510MM	N/A
VERTICAL MACHINING CENTER	CNC	XYZ 1110 HD	1000KG	1100MM	610MM	610MM	
VERTICAL MACHINING CENTER	CNC	XYZ 1510 HD	1200KG	1500MM	600MM	600MM	
VERTICAL TURRET MILLING MACHINE	MANUAL	ACRA	N/A	800MM	34MM	406MM	N/A
RAM HEAD UNIVERSAL	MANUAL	HURON MU6	N/A	1500MM	700MM	550MM	N/A
2 AXIS	CNC	PROTRAK	600KG	787MM	508MM	508MM	N/A

Electrical Discharge Machining						
Туре	Manual/CNC	Manufacturer Model	X-axis	Y-axis	Z-axis	
SINKER SPARK EROSION MACHINE	Manual	Sparcatron SPF 40W	370mm	600mm	400mm	
WIRE SPARK EROSION	CNC	SYKES FANUC W2	350mm	480mm	290mm 200 max cut	
WIRE SPARK EROSION	CNC	SYKES FANUC W2	350mm	480mm	290mm 200 max cut	
WIRE SPARK EROSION	CNC	SYKES FANUC W2	350mm	480mm	290mm 200 max cut	
CAD CAM SOFTWARE	N/A	DOLPHIN	N/A	N/A	N/A	
Grindors						

Grinders					
Manual/CNC	Manufacturer Model	Magnetic Table	X travel	Y travel	Z travel
MANUAL SURFACE GRINDER	JONES AND SHIPMAN	460mm x 150mm	600mm	200mm	210mm

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## Correa 75 FE 3M.

Able to handle 19 tonne items with a maximum reach of 7.5m in the X, 1.5m in the Y and 3m in the Z direction, which came as part of our recent acquisition

A highly versatile traveling column machine with lateral ram. Highly robust system based on a system of L guided ram. A high precision machine appropriate for roughing and finishing operations, complete with a universal orthogonal indexing milling head allowing rotation every 0.02degrees.

The 60 station automatic tool changer, and Heidenhain CNC control delivers exceptional flexibility to take the most demanding applications, with travels in the X of 7.5m, Y of 1.5m and 3 m in the Z axis.

## **MTE KT-4200.**

We invested in our new milling machine to significantly increase in-house machining capability to 4m on the X-axis, 1.5m on the Y-axis and 2m on the Z-axis with bed loading capacity of 11 tonne.

A high precision robust Bed Mill, complete with a 3 range gearbox delivering a maximum spindle torgue of 2055Nm at a lowly 150 rpm, ideal for cutting exotic materials widely used in the Nuclear and Oil sectors. The Hedenhain TNC 640 control drives the automatic milling head head capable of 0.02 degrees of incremental movement. A fully enclosed machine allowing the use of 20 bar through spindle coolant, providing excellent lubrication/ cooling to the tool face and control of swarf evacuation. X axis travel 4M, Y axis 1.5M and a Z axis of 2M.











## **Facilities** Lillyhall Workshops.

Our Lillyhall facility is comprised of four workshops, comprised of two stainless steel workshops, one carbon steel workshop and a machine shop.

These facilities are used for welding, cutting, forming, machining, assembly, pressure testing, loading testing, inspection and non-destructive testing.

### **Facilities** Workington Workshops.

Following our successful acquisition of T.I.S. Cumbria Ltd, we inherited office space and workshop in Derwent Howe Industrial Estate.

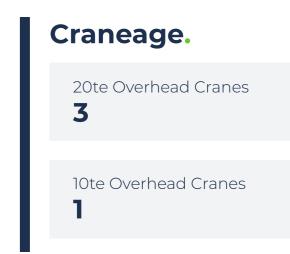
Centrally located in Workington, the space features workshops separated for carbon and stainless works, large and small machining as well as an area currently used as a rig space.

The facility can carry out all aspects of works as per the Lillyhall facility but also features rig space, a Correa 75 FE 3M CNC Milling Machine, a MTE KT-4200 bed type milling machine and the largest radiography bay in Cumbria

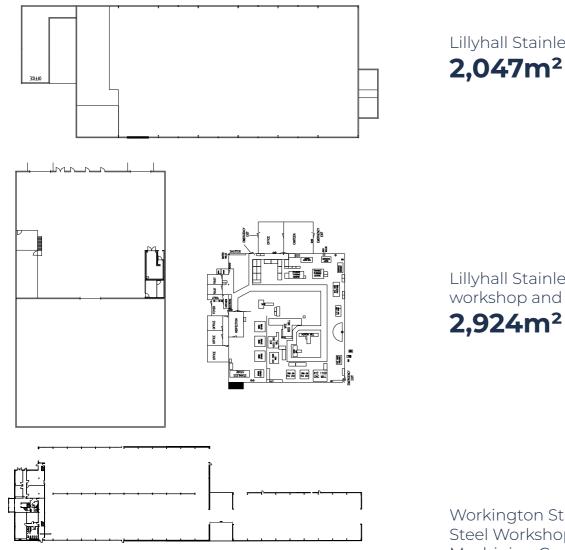








## **Our workspace**.





Lillyhall Stainless 1 2,047m<sup>2</sup>

Lillyhall Stainless 2, Carbon workshop and Machine shop

Workington Stainless & Carbon Steel Workshop 4 and Large Machining Centre Workshop

### 4,056m<sup>2</sup>

Kerry Park Workshop **792m<sup>2</sup>** 

**Total Workshop Space** 9,829m<sup>2</sup>

## A top-drawer record.

We are proud of our health, safety, security and environmental performance. Achievements in this area remain the number one corporate objective and this is actively supported from the executive board, down through the entire organisation.

We are fully aware of the need for continuous improvement and we actively support ongoing development of our compliance and assurance systems. The Shepley Group have 61 combined Gold RoSPA awards, and in 2019 achieved 14 million working hours without a RIDDOR reportable accident.

Some of our key awards to date include;

**RoSPA President's Award** 

In 2023 West Cumberland Engineering were awarded a President's Award, following 11 consecutive RoSPA Gold Awards.

**PPP Supply Chain Excellence Award** Presented by Sellafield, commending our Right First Time performance, local workforce and apprenticeship intake

**BECBC Highly Commended Collaboration Award** As part of our Cumbria Manufacturing Alliance joint venture, highlighting our success in collaborative delivery

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The proof is in the pudding.

## **Case Studies**.

**Duration** 

2 years

Vessels

**Project Value** 

£1,600,000

15

### **Tanks and Vessels**

The existing Site Ion Exchange Effluent Plant (SIXEP) at Sellafield has been operational since 1985, and is responsible for removing radioactivity from various streams on the site. A new treatment plant, called SIXEP Continuity Plant (SCP) is currently being built to replace the existing facility.

The tanks and vessels inside of SCP will act like kidneys. removing radioactivity from effluent streams before they can be safely released to the Irish Sea.

The 7 vessels are the final phase two plant items to be delivered for this scope of work and have been **completed** 6 months ahead of schedule. 15 tanks and vessels have been made in total.

project, 8 tanks and vessels, once again completed on budget and ahead of schedule. Manufacturing for Phase 1 commenced in October 2020 and across both Phase 1 and 2 WCEL have delivered 22 vessels to SCP.

# This comes after the successful delivery of Phase 1 of the

### **Case Study Evaporator D**

### At the time of construction, Evaporator D was the largest nuclear decommissioning project in the UK. It was designed to continue reduction of the volume of highly active legacy waste.

With Evaporator C having outlived its shelf life, Evaporator D was designed to reduce the volume of Sellafield's most radioactive waste product – highly active liquor. The plant is the only evaporator on the site able to process high-level liquid waste created during the clean-out of the Sellafield's reprocessing plants. It reduces the volume of liquor so it can be turned into gas form and safely stored.

West Cumberland Engineering completed over one hundred contracts directly associated with Evaporator D. The majority of these were associated with pipework in some capacity, ranging from small spools to large vessels.

Approximately 20km of pipe & 860 pipe support were fabricated including a modularised pipebridge. The pipebridge featured 12 modules, weighing a combined 150 tonnes of structural steelwork. These modules were pressure tested, and the largest was over 35 metres in length.

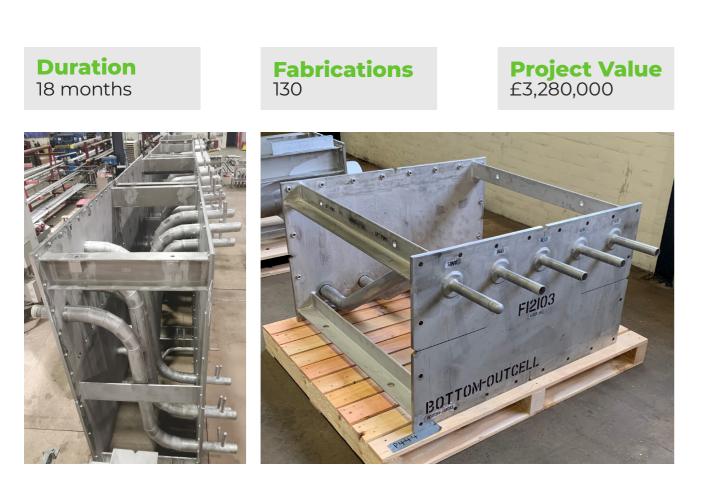


Project Value	£6,400,000		
Pipework Installed	20,000km		
Butt Welds	10,000		
Right First Time Weld Rate	98%		

### **Floor and Wallboxes**

This project consisted of fabricating and testing 130 different items including Wall / Floor Liners, sumps and Chimney Tubes for the Sixep Continuity Plant (SCP) at Sellafield for the Programme and Project Partners (PPP).

Some of the wall boxes weighed in excess of 4 tonnes and were over 2.5m tall, consisting of complex coaxial pipework's with lobster back methods to achieve bend radiuses.





### **Case Study 63 Can Fuel Racks**

#### The UK currently has only one storage pond for Advanced Gas-cooled Reactor (AGR) fuel, located at Sellafield's Thorp plant.

The 7 currently-operating AGR power stations have limited storage space for spent fuel, constraining the speed at which they can be defueled.

The current storage compartments can hold 20 cans of spent fuel, however this new design has the capacity to hold more than triple this, hence the name 63 Can Racks. This will ensure accelerated bulk defueling of the AGR reactors, from 8 years to 3.5 years.

Following the manufacture of the Hybrid 1 fuel racks, an improved Hybrid 2 design was made to further increase efficiency.

Cumbria Manufacturing Alliance - a joint-venture between WCEL and Bendalls Engineering - were successful in winning the manufacture of 80 Hybrid 2 63 Can Fuel Racks.





**Duration** 4 years

Racks 87

#### **Tax Saving** £2 billion



# Doing our bit environmentally and socially.

## We strive to make a difference.

We understand the impact our Group has on our local communities and the environment. We are committed to utilising our resource to ensure the communities we serve are self-sustainable, through our Skills Academy, training and development programme and local SME Spend.

### **Environmental** in numbers

**EV** Chargers 8

EV Fleet vehicles

Renewable tarrifs 100%

Landfill diversion 100%

Van Fleet Reduction 50%

Estimated CO2 saved 74 tonne

Statistics for Jan 2022 - Dec 2022





# **Our apprenticeships.**

Inclusive of our apprentices, graduates, trainees and Improverships, over 16% of our business is comprised of employees in earn-and-learn positions.

We're a Gold accredited member of the 5% Club - a dynamic movement of employers all of whom are inspired to take positive action for increased, inclusive, and accessible workplace training for all.

We take great pride in our apprenticeship scheme, currently having 65 apprentices training with the Group, and several proven examples of how our apprentices can progress through the company - our Managing Director and several members of our Board of Directors started their careers as apprentices in the Shepley Group.

The previous two years have seen consecutive records broken in our apprenticeship intake, hiring 21 apprentices in 2022 – encompassing over 50% females – and in our 2023 intake we hired 23 apprentices across five trades, our largest yearly intake to date.

We work closely with training providers such as Lakes College to help them develop a practical syllabus that suits our business, and currently have 15 mechanical apprentices training with us at WCEL.



## 100+ mechanical apprentices since 2002



Earn and Learn Recognition Scheme

## **Skills Academy.**

West Cumberland Engineering teamed up with Bendalls Engineering in an agreement to develop and deliver a 4-week Skills Academy whereby 8 people not in education, employment or training would be able to gain experience and training in engineering, both in the classroom and on the job.

The goal was to take 8 candidates who required a level of upskilling in order to make them desirable to employers who are looking to recruit and enable them to stand out from the rest of the competition.

The academy was broken down into 3 sections, the first being 1 week of classroom-based learning covering topics such as Manual Handling, Asbestos Awareness and Human Performance. All candidates walked away with an IOSH Working Safely Certificate which is a pre-requisite for a CSCS card to work in our sector.

Weeks 2 and 3 consisted of work placements whereby candidates were able to try a multitude of skills such as welding, machining and metal work, and week 4 concluded the Academy; rounding off the experience with a self-development series of courses looking at CV writing, presentation, communication skills and interview techniques.

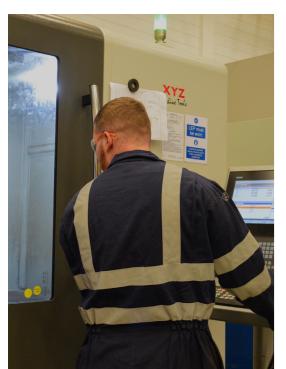
The Skills Academy has been a huge success, with one of the candidates securing an apprenticeship opportunity at a local organisation who were impressed by their commitment during the academy, and another currently completing an apprenticeship at West Cumberland Engineering!

One attendee said "The Skills Academy has been an informative and enjoyable experience. I am delighted to have gained extra gualifications that are recognized by the Industry and I feel much more confident with my CV, I will be well prepared for any potential interviews."

















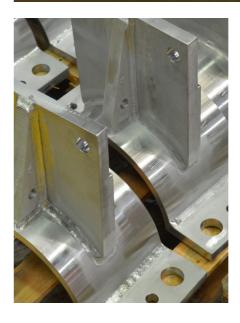




















## Get in touch.

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ShepleysUK



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