Howorth Air Tech

Healthcare

Reducing risk.
Improving outcomes.



From operating theatres
to critical care,
we take care of it.

Howorth Air Tech

Clean air pioneers since 1858



1858 The clean air revolution begins

Our passion for air quality began in Lancashire's poorly ventilated cotton mills, where founder James Howorth, inspired by his father Hugh Howorth's vision, began manufacturing ventilation apparatus to protect workers and improve working conditions.

1961 The world's first UCV system

World renowned orthopaedic surgeon, Sir John Charnley, recognised the need for a micro-biologically clean surgical zone which transformed air quality in operating theatres.

The world's first Ultra Clean Ventilation (UCV) system, The Greenhouse, is created.

1965 The BEX System

The Bex System (Suction Suit) was designed to support cleaner, safer surgical environments.

The first in a long line of Howorth innovations that would transform surgical environments and improve patients' lives.

1970 Clean air moves forward

Howorth engineered the "Clean air Enclosure", with the DF10 manufactured in Bolton and installed at Wrightington Hospital.

1985-2000 The EXFLOW™ Era

The introduction of **EF12 & EF25, EXFLOW™ 90 & 90-5** and **EXFLOW™ 28 & 32** marked the continued evolution of Howorth's clean air systems.

2012 EXFLOW™ Evolution goes global

EXFLOW™ 28 Evolution installed in Washington, Newcastle, UK.

2013 EXFLOW™ 32 Evolution

EXFLOW™ 32 Evolution continued the development of Howorth's clean air systems.

2026 EXFLOW™ Evolution EC



We've fabricated UCV systems in-house since 1961 and we remain the only UK based manufacturer to do so.

Helping healthcare environments

flow better

Today, Howworth continues to support NHS and private healthcare providers across the full lifecycle of critical healthcare environments; from capital project design, manufacture and installation through to commissioning, verification, planned maintenance and long-term service support.

Our healthcare team brings specialist knowledge, national coverage and practical experience in supporting operating theatres and clinical environments where clean air performance is essential. Our strength comes from combining proven clean air technology with dedicated healthcare expertise across engineering, commissioning and service support.



Collaboration

is at the heart of everything we do



The moment you talk to the people at Howorth about clean air technology, will be a moment of clarity. Listening to our customers' needs, opening new conversations and creating robust, safety-focused solutions makes us a more proactive and helpful partner.

Our people operate with integrity, caring about every detail, managing each step of the process and applying innovative thinking to achieve more successful outcomes. The way we see it, the higher the standards of service, the greater the quality of life.

Design & Build

Howorth Specialist Environments is a dedicated business unit that focusses on the delivery of intricate and technically complex environments for customers operating in highly regulated multi-disciplined sectors requiring full CDM project coordination.





Clean room thinking from start to finish

Demand in this area is growing as clients realise that a single accountable partner can be a huge benefit.

Our forward-thinking turnkey solutions are setting new standards in the next generation of healthcare and clean room facilities. From project feasibility, and throughout the whole project lifecycle, our focus on excellence ensures smooth progress from concept to completion across operating theatres, critical care and clean room facilities.



Concept

Design & Technical Definition

1

We will undertake an initial feasibility study, develop a layout proposal and produce budgetary pricing. The Specialist Environments team manages the various sub-contracted elements including commissioning and validation, along with the coordination of specialist partners to ensure the completed environment meets all required performance criteria and is ready for operational use.

Construction

Project Coordination & Installation Management

2

Having successfully under-taken a wide variety of turnkey healthcare and pharmaceutical construction projects, our highly experienced team of project managers and engineers will plan, coordinate and deliver your specialist project. We will also manage the entire process, planning, sequencing, site coordination, and CDM compliance to ensure safe, efficient, and integrated delivery.

Completion

Handover & Close-out

3

We are totally focused on minimising downtime and disruption, delivering you an area that is back in operation as quickly as possible. The department ensures clients receive a fully documented, verified environment with clear operational information, providing a smooth transition from construction back to use.

A breath of fresh air for healthcare area design



Design & Technical Definition

The team leads the design and coordination of specific controlled environments, ensuring all architectural, mechanical, electrical, and control elements align to meet performance and regulatory requirements.

Procurement of Specialist Components

As well as manufacturing state-of-the art products, the team also sources high-quality, pre-engineered components from trusted suppliers, selecting and integrating them to suit the specific needs of each environment. This approach opens up the opportunity to engage with a variety of different suppliers.

In-house experience of delivering complex clinical and pharmaceutical areas

Single source for Specialist Clinical Equipment

- Howorth UCV Systems:
  - Operating Lights
  - Pendants
  - TCP Systems

- All Manufacturers Supported
- Air Handling Units (AHU)
- LTHW / CHW Systems
- Ductwork Installations
- Medical Gas Systems
- Building Management Systems
- LV Distribution
- UPS / IPS Systems
- General Lighting Installations
- Steelwork

Interior & Finishing Works

- Theatre Wall Coverings
- Decorating Works
- Hygienic Wall Cladding
- Sanitary Ware
- Walls & Partitions
- Doors
- Ceilings
- Flooring

Scope of Services

- Project Management (PC)
- Site Management
- Specialist Design Coordination
- Health & Safety Management

Cost-effective solutions without the hassle

De-risking a highly technical project delivery process.



Commission and Validation Oversight

Specialist Environments manages the various subcontracted elements which include commissioning and validation teams, coordinating the specialist partners to ensure the completed environment meets all required performance criteria and is ready for operational use.

Project Coordination & Installation Management

Installation is delivered through specialist subcontractors (both internal and external), but the team manage the entire process, planning, sequencing, site coordination, and CDM compliance—to ensure safe, efficient, and integrated delivery.

Handover & Close-out

The team ensure clients receive a fully documented, verified environment with clear operational information, providing a smooth transition from construction to use. And when everything is complete, we also offer complete servicing, validation and maintenance support.

Dedicated to delivering high-performance, safety-critical spaces where precision and reliability are non-negotiable.

Our depth of experience in design, construction and commissioning enables us to be a proactive, solutions-driven partner. We listen carefully, anticipate challenges early and minimise disruption with robust, safety-focused approaches tailored to each environment. Integrity underpins everything we do. We care about every detail, micromanage each stage of the process and apply innovative thinking to achieve consistently successful outcomes. And once your facility is operational, we continue to support you with comprehensive servicing, validation and maintenance packages to ensure long-term performance and compliance.

Expertise

Whether you are looking to extend an existing structure, convert a redundant area into a new operating department or upgrade an old facility, we have the experience and expertise to make your plans a reality.

Theatre refurbishments

We have refurbished hundreds of operating theatres, literally transforming them in just a few weeks into state-of-the-art, ultra clean, fully HTM compliant facilities.







For more information contact:

specialistenvironments@howorthgroup.com



- Ultra Clean Ventilation
- Operating Lights
- Pendants

Equipment & Service

EXFLOW™



Exceptional
AIR QUALITY
pure and simple

Since 1962, the Howorth **EXFLOW™** UCV system has set the standard for Ultra Clean Ventilation systems.

It has been installed in over 4,500 operating theatres worldwide, transforming post-procedure recovery by protecting the wound site from Surgical Site Infections (SSI), and creating creating an ultra clean air zone around the patient and surgical team.

And today, our ventilation innovation goes on...

EXFLOW™ UCV Canopy

The use of Howorth's **EXFLOW™** UCV systems has been proven continuously to reduce the occurrence of SSI in operating theatres.

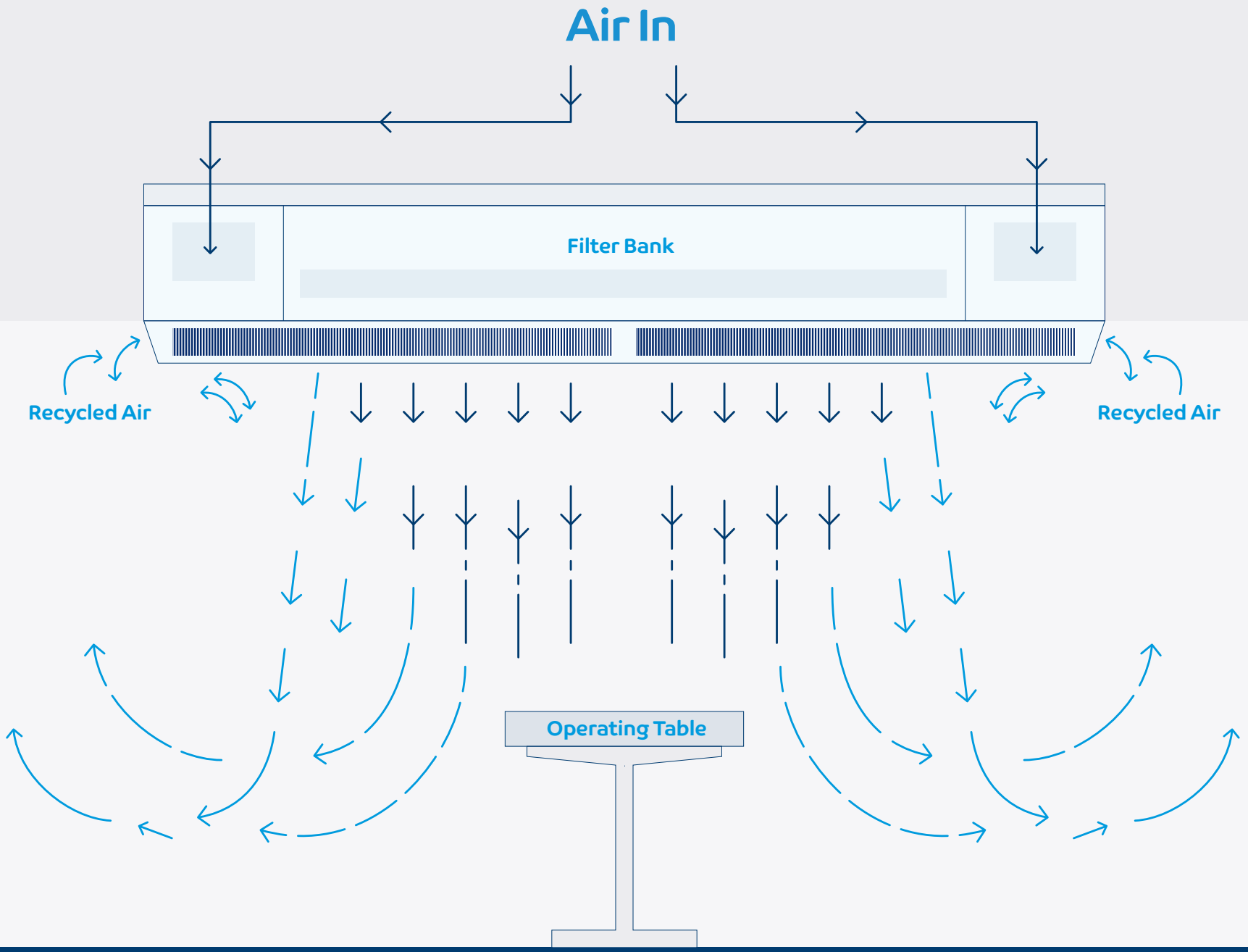
The Howorth **EXFLOW™** UCV canopy is available in two sizes, **EXFLOW™** 28 (2.8m) and **EXFLOW™** 32 (3.2m).

Both models provide microbiological cleanliness and airflow results exceeding all current healthcare guidelines.

The **EXFLOW™** screenless UCV canopy incorporates a patented Conda air containment system to maximise the open-sided clean area and minimise the risk of contamination in the clean zone without the need for side screens, low-level vents or mechanical extract.

- Unique exponential airflow pattern
- No entrainment, even without full side walls
- Up to 500 air changes an hour
- Larger clean zone protects instruments
- Graded airflow, higher central velocity overcomes thermal plumes
- Completely self-contained





EXFLOW™ Evolution UCV Airflow Pattern



A BRIGHTER
vision for the future

marLED® X
Lighting at its most versatile. And most precise.

With hospitals under pressure to achieve more while spending less, reducing the time it takes to switch to the right theatre lighting for each operation is key. Because every situation, every tissue and every user is different, having the correct lighting is essential to ensure a successful procedure.

Enter the new **marLED® X**. Lighting so versatile, it's suitable for every situation and everyone who operates it, keeping operation set-up time to a minimum.

Besides its long service life, it also features the latest LED technology, which ensures that the surgical site is always in brilliant, homogeneous light. While its innovative beam path offers a wider light field which can be matched to surgeon preference, making it the most versatile operating light on the market.

Adaptable solutions brought to light





marLED® X

Key features:

Latest LED technology
Warm white/cold white LEDs combined with unique high-tech lenses provide brilliant, homogeneous light. A special feature: every single LED of the **marLED® X** can be controlled separately.

Active shadow management
Active Shadow Management is a fully automatic system for ensuring that light is always available exactly where it is needed.

Perfect and even illumination
96 powerful LEDs ensure that the surgical site always appears in the best light, literally.

X-beam path for maximum variability
With its innovative beam path concept the **marLED® X** offers you a previously unattainable light field size from 14cm to 35cm. The variable light geometry will also impress – available as round or oval.

marLED® E15/9i

Key features:

Variable Colour Temperature:
Extended colour temperature range between 3,000 and 5,500 K.

Superior Light Quality & Precision
Changing the colour temperature via the sensoGrip multi-function handle directly on the light.

Endo-Mode & Backlight Features:
Continuous adjustment of the backLite background light from 1% to 30%, i.e. for endoscopic procedures.

LTM (LightTubusMax / Comfort Light):
Automatic setting of a standard light field with preset illuminance, diameter and colour temperature.

User-friendly:
Optional: saving of discipline- and user-related settings.



Adaptable SOLUTIONS

for operating theatres and ICUs

From simple rigid box units mounted on the EXFLOW UCV system to advanced, multi-functional pendants that support digitally integrated operating theatres and ICU environments.



Howorth EX300

The Howorth EX300 is a UCV canopy-mounted pendant with horizontal rotation and vertical movement. It includes medical gas and electrical/data connections to provide flexibility in smaller theatres.

Key features:

- Up to 9 Medical gas Terminals
- Up to 8 Double power outlets or similar (Data Points/nurse call Etc)
- Horizontal and vertical movement
- Fully customisable to the requirements of the theatre
- Light weight compared to articulating pendants



Howorth EX100

The Howorth EX100 rigid theatre pendant is ideal for a simple supply of power, medical gas and data.

It is completely customisable to suit the needs of the theatre.

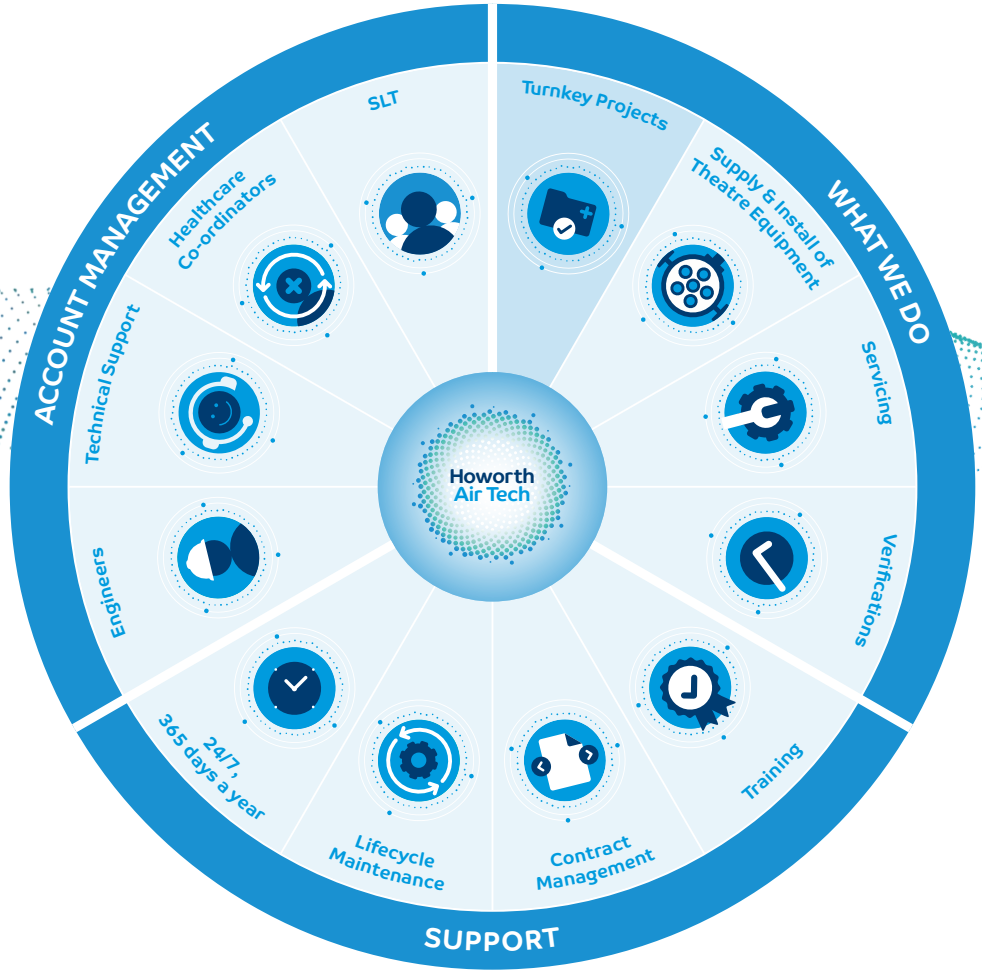
A retractable unit, EX200, is also available (hoses are required).

Key features:

- Up to 9 Medical gas Terminals
- Up to 16 Double power outlets or similar (data points/nurse call)
- Fully customisable to the requirements of the theatre
- Rigid removing the need for medical gas hoses
- Light weight compared to articulating pendants

Our approach to servicing is

tried, tested, verified and trusted



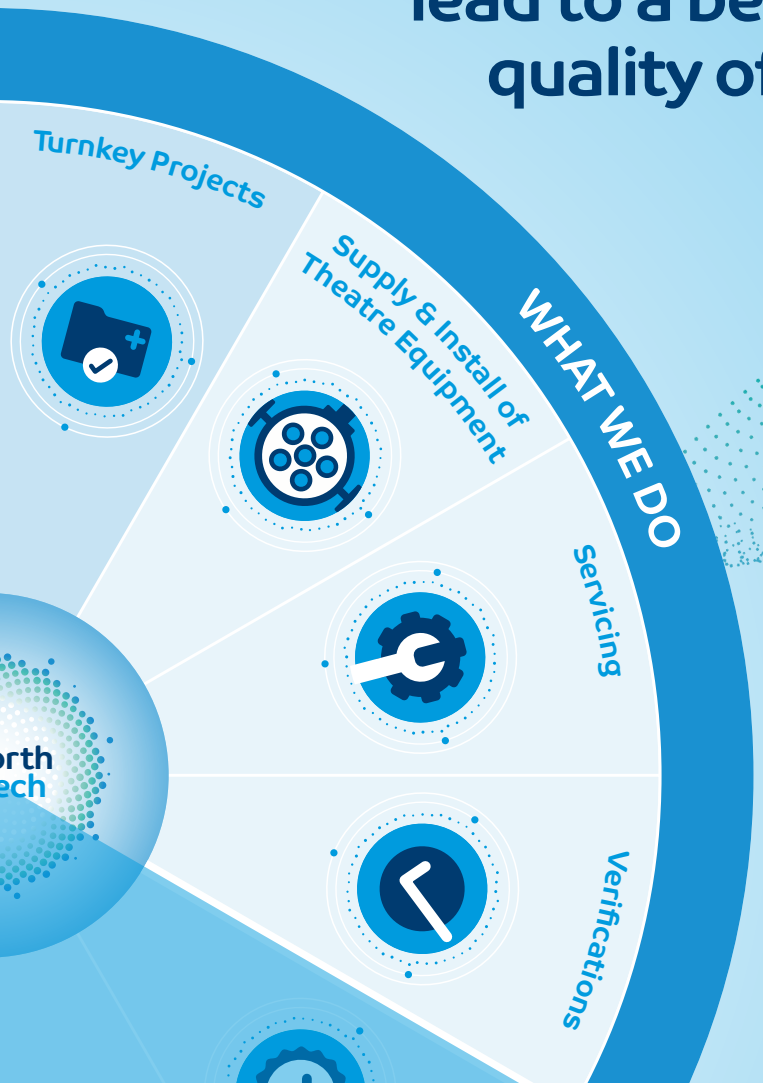
This ensures all-round safety and continuity.

Howorth's unrivalled reputation for service quality and verification capability is the reason why we have so many long-standing partnerships across the healthcare sector.

Our approach is both supportive and collaborative, with service engineers who are highly qualified, expertly trained and equipped with continuously calibrated technology, providing you with the very highest level of maintenance in the market.

Higher standards

lead to a better quality of service



Turnkey Projects:

Howorth Specialist Environments delivers turnkey healthcare projects from initial planning and design through to installation, commissioning and handover. By coordinating key stages through one specialist partner, we help reduce complexity and support smooth project delivery.

Supply & Install of Theatre Equipment:

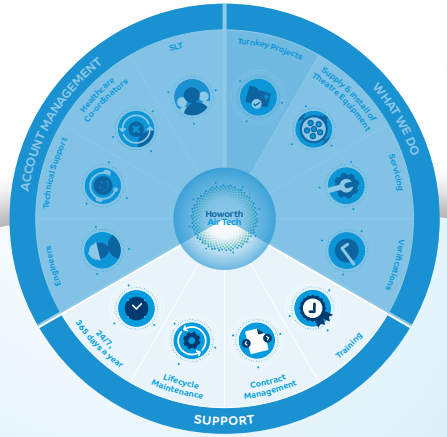
Howorth supplies and installs specialist theatre equipment for operating theatres and clinical environments. From planning through to installation, our team helps ensure equipment is delivered safely, efficiently and in line with customer requirements.

Servicing & Verifications:

We understand that ensuring optimum performance and day-to-day dependability across your healthcare equipment and facilities is absolutely essential, which is why we can offer you:

- Initial validation of critical ventilation systems in line with HTM 03 01 Part A.
- Critical ventilation verifications in line with HTM 03 01 Part B.
- Local Exhaust Ventilation (LEV) thorough examination and testing in line with HSG 258 (P601).
- Rebalancing of ventilation systems in line with BSRIA & CIBSE codes of practice
- Ultra Clean Ventilation (UCV) canopy servicing (in line with manufacturers' recommendations)
- Operating lights and medical gas pendant servicing in line with manufacturers' recommendations
- Cleanroom verifications in line with the relevant Health Building Note (HBN)
- CAT 3 & isolation room verifications
- Fume cupboard and safety cabinet repair and servicing in line with British Standards
- AHU servicing

Air quality meets Quality Service





Contract Management:

Howorth supports customers with clear, proactive contract management across planned service, compliance and ongoing support. This helps maintain visibility, strengthen communication and ensure service delivery remains aligned with customer requirements.

Lifecycle Maintenance:

Howorth helps customers manage healthcare equipment throughout its full lifecycle. Our maintenance approach supports ongoing performance, compliance and informed planning for upgrades, remedial works or future replacement.

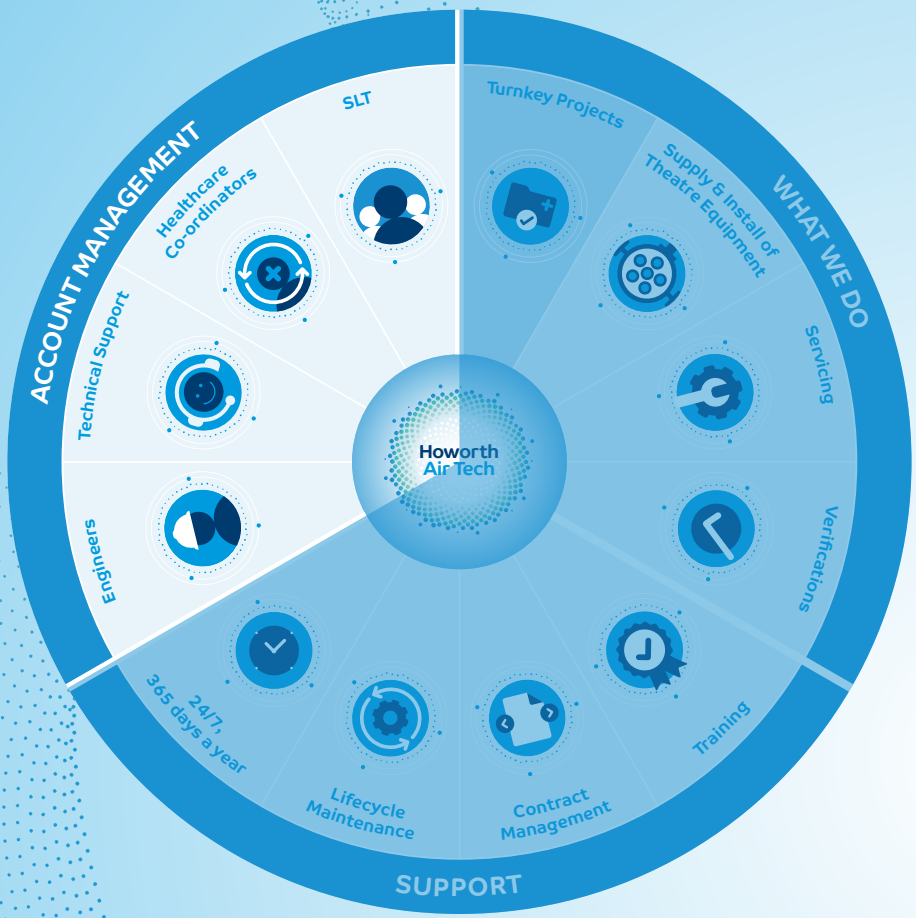
Training:

Howorth is committed to developing skilled people through apprenticeships, structured training and ongoing staff upskilling. This investment helps maintain technical competence, strengthen service delivery and support customers with knowledgeable, capable teams.

24/7, 365 days a year:

Howorth provides round-the-clock support for critical healthcare environments. Our 24/7, 365-day service gives customers confidence that specialist help is available whenever it is needed.

A centre of clean air
Excellence



Technical Support:

Providing specialist guidance across healthcare equipment, clean air systems and service requirements. They support customers, engineers and account managers with technical queries, fault investigation, product knowledge and recommended remedial actions.

Engineers:

Deliver specialist installation, servicing, verification and remedial works across healthcare environments. They understand the importance of safe working, clear communication and minimising disruption to clinical services.

Senior Leadership Team:

Remain closely connected to healthcare delivery, providing clear direction, accountability and support, giving confidence that key decisions can be made quickly and that every project or service contract is backed by senior-level ownership.

Healthcare Co-ordinators:

Providing the day-to-day link between customers, account managers and engineers. They help coordinate visits, manage communication and keep service activity organised, visible and on track.



Conversions, modifications and upgrades

We're fully EQUIPPED to improve and upgrade your equipment

When it comes to conversions, modifications, upgrades and ergonomic improvements, you can't improve on our service.

Our flexible approach to keeping equipment fit for purpose means that wherever possible, upgrades can be carried out with minimal disruption.

Extending the life of existing equipment, while providing maximum protection for your people and full compliance with industry regulations.

We can refurbish existing UCV systems without the need for complete replacement, extending asset life, improving reliability and helping hospitals minimise disruption to surgical services.

Transforming lives in healthcare spaces

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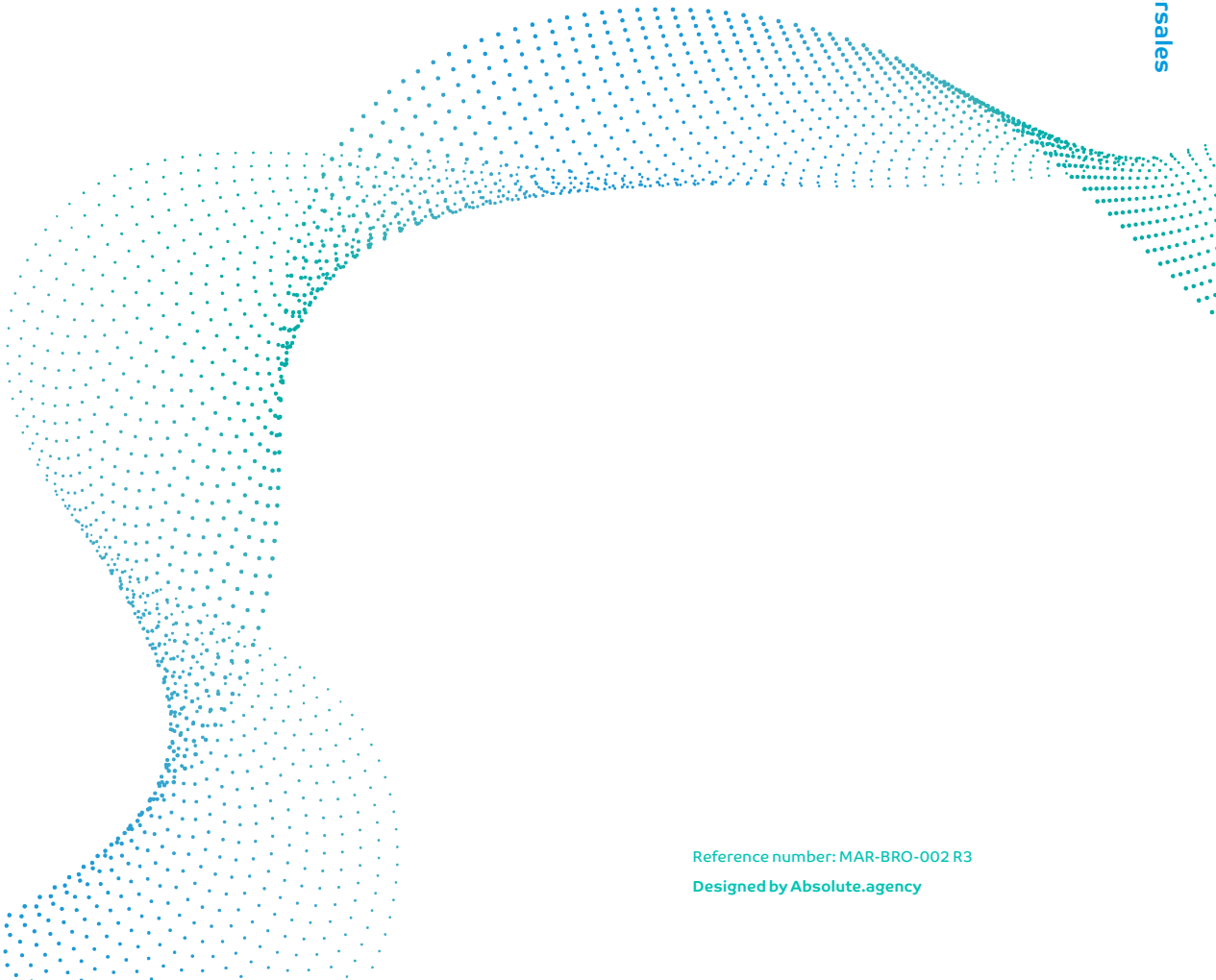
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