tga | Consulting Engineers

Capability Statement

Delivering innovative, efficient, and sustainable Building

June 2026

Who We Are

TGA Consulting Engineers Limited operate in an integrated team with the Building Performance Engineers working directly together with Mechanical and Electrical Engineers (together with BIM Technicians and Specialist Lighting Designers where required). TGA work nationally with offices in 5 locations.

Our Approach

- Take time to build a good working relationship
- Be clear from the start about what we think you need
- Be open, honest, and work in partnership with you
- Keep you up to date with our findings
- Deliver your project successfully

Healthcare Services & Capabilities

Our healthcare team has a strong track record of collaborating with NHS Trusts, architects, and contractors across the healthcare sector. We bring extensive experience in delivering HTM-compliant designs while also prioritizing decarbonisation, energy efficiency, and sustainability - supporting the NHS's Net Zero aspirations.

We've worked on a diverse range of projects, including hospital refurbishments, extensions, and the development of state-of-the-art medical facilities. Our expertise also includes implementing advanced healthcare technologies to enhance patient care and operational efficiency.

By creating and refurbishing sustainable, efficient, and HTM-compliant NHS environments, we help our clients push the boundaries of what's possible - working and learning together to deliver the best solutions for their healthcare needs.

MEP

SL

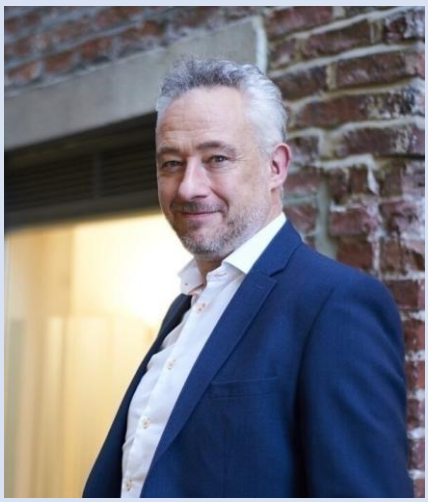
BP

BIM

Healthcare Team

Engagement in healthcare projects is crucial for us, with each of our team members being visible and approachable from day one.

Scott Graham – Director



Scott Graham is an experienced engineering professional with extensive expertise in the planning, design, construction, and commissioning of healthcare facilities in the UK and internationally. He has worked across a wide spectrum of healthcare projects, from early-stage strategy and infrastructure planning through to delivery and operational readiness.

Scott was seconded to UK Trade & Investment (UKTI), where he helped develop the High Value Opportunities (HVO) Programme for the healthcare sector. In this role, he supported UK organisations in securing international healthcare projects, with particular responsibility for initiatives in Saudi Arabia, Kuwait, Oman, and Brazil.

His UK project experience includes major acute and mental health facilities. He has led and contributed to multiple hospital refurbishments and new-build developments, including critical care units, operating theatres, and ward upgrades at the Royal Victoria Infirmary in Newcastle upon Tyne. Scott has also undertaken estate-wide condition surveys, compliance reviews, and lifecycle cost assessments, notably at Northgate Hospital.

In addition, Scott has strong commissioning expertise, having acted as a third-party Commissioning Manager on large PFI healthcare schemes, overseeing testing, validation, and handover processes while supporting the development of comprehensive operational documentation.

Emma Marshall – Technical Director / Healthcare Lead

After graduating with a first-class master's in building services engineering, Emma was awarded the CIBSE/ASHRAE Graduate of the Year before obtaining her Chartered Engineer status.

Emma has worked as the Lead Mechanical Engineer on a wide range of projects throughout the UK and Ireland these include new build and refurbishment projects across a variety of sectors including healthcare, education, commercial and residential developments. Emma is also a qualified AP for Medical Gas Pipeline Systems.

Emma has experience in designing low carbon and net zero carbon designs integrating low and zero carbon technologies to meet the NHS Net Zero Carbon policies and aspirations.

Emma's number 1 piece of advice for aspiring engineers is to get involved as early as possible with the design in the early stages. This early engagement with the design team and client is fundamental to a smooth design process and positive relationship with the design team.

Will Powis – Principal Electrical Engineer

Will joined TGA in April 2022 after working for large multi-disciplinary engineering consultancies for the last 15 years.

Will has worked as both Lead Engineer and Lead Electrical Engineer on a wide range of projects across the UK and Ireland, including new build and refurbishment schemes. His portfolio spans multiple sectors, with particular strengths in healthcare, education, industrial, and residential developments.

Mike Dunlavy – Principal Mechanical Engineer

Mike Dunlavy is a Chartered Engineer with over 35 years' post-graduate experience within the Building Services Environment.

Mike has extensive experience in healthcare design, including complex new builds, infrastructure and refurbishments. He has been involved in project management at various levels and has a wealth of knowledge in all related areas such as contractual and interpretation planning.

Mike has worked as the Lead Mechanical Engineer on a wide range of projects throughout the UK and Ireland these include new build and refurbishment projects across a variety of sectors including healthcare, education, commercial and residential developments.

Healthcare Capabilities

TGA has developed a highly skilled, dedicated healthcare engineering sector with the technical expertise, sector-specific knowledge, and capability required to deliver compliant, efficient, and high-quality MEP designs aligned with healthcare regulatory standards.

We deliver integrated building services engineering for healthcare environments, with particular strength in refurbishment, repurposing and phased upgrades within live operational estates. Our teams combine technical excellence across mechanical, electrical, public health, fire and digital systems with a practical understanding of clinical risk, infection control, decant, commissioning and continuity of service.

Our healthcare capabilities include:

- strategic estate and feasibility studies;
- surveys and due diligence of existing assets;
- MEP design for a wide range of projects including ward, theatre, diagnostic and outpatient upgrades;
- plant replacement and infrastructure resilience;
- ventilation, water, power and lighting improvements;
- medical gas and specialist systems integration;
- decarbonisation and energy optimisation;
- fire and life safety upgrades; digital coordination and BIM;
- phased delivery planning in live environments;
- stakeholder engagement with estates, clinical and infection prevention teams;
- commissioning, validation and soft landings to support compliant handover aligned with relevant NHS guidance including Health Building Notes and Health Technical Memoranda.

Our refurbishment-led approach helps clients modernise ageing assets, unlock additional capacity, improve compliance and enhance patient, staff and visitor experience while managing programme, cost and operational risk. From targeted engineering interventions to complex multi-phase refurbishments, we support healthcare providers in creating safer, more efficient and more resilient environments for care.

We also have extensive experience in new build healthcare developments from early briefing and concept design through to detailed design, technical coordination, commissioning and handover. Our teams develop building services solutions that align with clinical planning, operational workflows, resilience, energy performance and future flexibility, with designs informed by relevant NHS guidance including Health Building Notes and Health Technical Memoranda for safe, efficient and adaptable healthcare environments.

Healthcare Experience

- New and refurbished operating theatres
- Maternity refurbishments
- Net Zero Carbon Compliance
- New Build Developments including RVI UTC
- IIU
- Pathology Departments and Laboratories
- State of the art Pathology Departments
- Energy Centres
- Ward Refurbishments
- Pharmacies
- Diagnostic Imaging Departments

Case Studies

RVI Urgent Treatment Centre

The new build Urgent Treatment Centre was constructed at the Royal Victoria Infirmary adjacent to the existing Emergency Department. The centre was designed to help improve patient flow for emergency and urgent treatment needs by providing additional waiting areas, clinical spaces and ancillary support.

Image Credit – Murray Scott

The project comprised the development of a new build centre adjacent to the existing A&E at the RVI to form an Urgent Treatment Centre. The building is standalone from the main building but was designed to operate alongside the existing department to improve services to patients. The new centre is built on the existing podium which created challenges in tying into existing services. The main plant areas are located beneath the podium and the unit served from below. The plant area consists of new A & B low voltage switchrooms, IT Hub and external mechanical plant areas. One of the main challenges of this project was the design of a new generator to replace the existing which primarily serves the Clinical Office Block but will also serve the UTC. Working within a live hospital environment presents some unique challenges.

1. Patient Safety and Infection Control: Ensuring patient safety is paramount. Construction activities must be carefully managed to prevent contamination and infection.
2. Minimising Disruptions: Construction work must be planned to minimise disruptions to ongoing medical services. This includes break ins into existing services and switch overs to new boards.
3. Compliance with Regulations: Construction in hospitals must comply with stringent health and safety regulations, including infection control measures and HTM compliance.
4. Coordination and Communication: Effective communication and coordination with hospital staff are essential to ensure that construction activities do not interfere with patient care and that the new development meets the needs of the hospital to provide an improved patient experience and working conditions for staff.

Client: Newcastle Hospitals NHS Foundation Trust

Status: Completed

Sector: Healthcare

Cost: £13m

Location: Newcastle upon Tyne

Sunderland Royal Hospital Maternity Department Refurbishment – Phase 1

TGA Consulting Engineers completed Phase 1 of a HTM compliant refurbishment of the existing Maternity Department to create 2No. Operating Theatres, recovery area, Antenatal rooms and ancillary support areas.

This refurbishment was undertaken to modernise the maternity department and enhance the quality, safety, and efficiency of clinical services. Existing infrastructure and building services were no longer aligned with current healthcare standards or the demands of modern equipment and patient care pathways.

This phased project was undertaken within a 24-hour live maternity department, where the existing theatre remained fully operational throughout. As the M&E services supported multiple areas, careful design and planning were required to maintain continuity and minimise disruption.

The mechanical works included medical gas systems, domestic services, drainage systems, new ventilation systems, a new DX cooling system, investigations, and improvements to the LTHW system and new BMS system. 3no. New AHUs were installed during to serve the 2No new theatres and adjacent spaces. Two of these units were new compact HTM compliant units which enable the plant to be installed within the constraints of the existing plantroom.

The electrical works included low voltage distribution upgrade and integration of a new UPS & IPS providing resilience and isolated power supplies to theatres and recovery. Enhanced earthing in line with BS7671 is provided to Group 1 and 2 medical locations. A new Nurse Call system was provided. New energy efficient LED lighting, in accordance with LG2, incorporating lighting controls is provided to the refurbished department.

Client: : Sunderland Royal Hospital

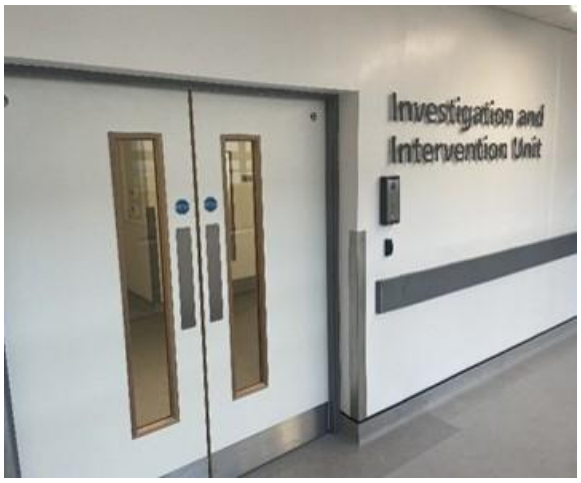
Sector: Healthcare

Location: Sunderland

Status: Completed Phase 1

Cost: £6.2m

Sunderland Royal Hospital - Investigation and Intervention Unit



TGA completed a HTM compliant refurbishment of the existing Endoscopy department to form a new Investigation and Intervention Unit, including a large open plan area, procedure rooms, single bedrooms and ancillary staff areas.

The departments' location presented significant constraints, including no direct access to plant areas. A new Air Handling Unit (AHU) was therefore designed to fit within a height-restricted undercroft courtyard. This required close coordination with the architect to incorporate strategic bulkheads for ductwork routing into the building.

The department is surrounded by live clinical areas, with existing services running through the works. Careful planning and coordination were essential to minimise disruption and maintain operational continuity.

The mechanical works included the installation of medical gas systems, domestic water services, drainage modifications, new ventilation systems, a DX cooling system, LTHW systems, and a new BMS.

Electrical works comprised an upgrade to the low voltage distribution, alongside the installation of new UPS and IPS systems to support resilient and isolated power supplies for Group 2 medical locations. Enhanced earthing in accordance with BS 7671 was provided throughout.

Additional systems included a new Nurse Call and Staff Attack system, replacement fire alarm, and new small power and data installations. Energy-efficient LED lighting, designed in accordance with LG2 and incorporating lighting controls, was installed throughout the refurbished department.

The services had to be carefully coordinated in a restricted ceiling void within the constraints of the existing structure.

Client: Sunderland Royal Hospital

Sector: Healthcare

Location: Sunderland

Status: Completed

Cost: £2m

University Hospital of North Tees Pathology Blood Science Laboratory

The project comprises the phased refurbishment of part of the existing Pathology Blood Science Department at North Tees Hospital to form a reconfigured blood science laboratory.

This project comprised the refurbishment of an existing 250m² Blood Science Laboratory located within the Pathology Department at the University Hospital of North Tees. The scheme was driven by the need to modernise the facility, improve operational efficiency, and accommodate new laboratory equipment within a revised layout.

The scope of works involved the complete strip-out and replacement of all mechanical and electrical (M&E) engineering services serving the laboratory. The new installations were carefully designed to align with the updated spatial configuration and to meet the specific demands of the latest laboratory technologies. Given the laboratory's location within a live 24-hour hospital department, maintaining continuous operation was a critical project requirement. The works were therefore delivered in carefully planned phases, with a comprehensive phasing strategy developed at the design stage.

This ensured minimal disruption to ongoing clinical services while maintaining safety and compliance standards throughout the construction process. The electrical works included the modification, upgrade, and renewal of the electrical systems. New electrical distribution boards were installed, alongside additional socket outlets, data points, and modern lighting solutions. These enhancements significantly improved functionality, resilience, and the overall working environment within the laboratory. The mechanical scope included modifications to existing ventilation, above-ground drainage systems and the installation of new domestic water services. These were designed to suit the updated laboratory layout and to support newly installed equipment, ensuring compliance with healthcare standards and operational efficiency. This project successfully delivered a modernised, fully functional laboratory environment while maintaining uninterrupted service within a busy hospital setting, demonstrating effective planning, coordination, and execution of complex M&E services in a live healthcare environment.

Client: North Tees Hospital / P+HS

Status: Completed

Sector: Healthcare

Cost: £1.5m

Location: Sunderland

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