tga | Consulting Engineers



Capability Statement

Delivering innovative, efficient and sustainable buildings

September 2026

Who We Are

TGA Consulting Engineers operate as an integrated engineering team, with Electrical, Mechanical and Building Performance Engineers working alongside BIM Technicians and Specialist Lighting Designers. 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 is needed
- Be open, honest & work in partnership delivering solutions
- Provide consistent and measured feedback on progress
- Deliver projects successfully

Healthcare Services & Capabilities

TGA has extensive experience in the design and delivery of building services for healthcare environments, working with NHS Trusts, design teams and contractors across new-build, refurbishment and infrastructure projects.

Our experience includes the refurbishment and repurposing of existing clinical accommodation, where careful consideration of existing infrastructure, operational requirements and continuity of service is fundamental to successful delivery. Our designs are developed with reference to relevant Health Technical Memoranda (HTMs), Health Building Notes (HBNs) and other applicable healthcare guidance.

We combine healthcare engineering knowledge with a practical and collaborative approach to design, coordination and delivery. From early surveys and feasibility studies through to detailed design, construction and commissioning, our focus is on developing safe, compliant, efficient and maintainable engineering solutions that respond to the needs of the healthcare environment.



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 – Partner / 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 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 upgrades and refurbishment projects. 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 provides integrated building services engineering across a wide range of healthcare projects, with particular experience in the refurbishment, repurposing and upgrade of existing healthcare facilities.

Working within existing and operational healthcare environments requires a detailed understanding of existing infrastructure, clinical requirements, engineering resilience and the practical constraints associated with delivering change while maintaining essential services. Our approach combines this understanding with coordinated mechanical, electrical, public health and specialist engineering design.

Our healthcare capabilities include:

- Strategic estate, feasibility and option studies
- Surveys and assessment of existing engineering infrastructure
- MEP design for new-build, refurbishment and repurposing projects
- Ward, theatre, diagnostic, laboratory and outpatient facilities
- Plant replacement and infrastructure upgrades
- Ventilation, heating, cooling and domestic water systems
- Electrical distribution, resilience and essential supplies
- Medical gases and specialist clinical systems
- Fire, life safety, security and communication systems
- Energy efficiency, decarbonisation and Net Zero Carbon strategies
- BIM and multidisciplinary design coordination
- Phased works within operational healthcare environments
- Contractor liaison and construction-stage technical support
- Commissioning, validation and handover.

Our designs are developed with appropriate consideration of relevant Health Technical Memoranda, Health Building Notes and other applicable healthcare standards and guidance, alongside the particular operational and clinical requirements of each project.

Healthcare Experience

- New-build and refurbished healthcare facilities
- Operating theatres and clinical procedure areas
- Diagnostic and imaging departments
- Pathology departments and laboratories
- Maternity facilities
- Ward and outpatient refurbishments
- Investigation and intervention facilities
- Pharmacies
- Energy centres and infrastructure upgrades
- Healthcare decarbonisation and energy projects

Case Study 1

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

Case Study 2

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 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

Case Study 3

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

Status: Completed

Sector: Healthcare

Cost: £2m

Location: Sunderland

Case Study 4

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: Stockton

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