

Healthcare

Capabilities and
innovations



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Foreword

Gordon Stirling

National Health Director at Tilbury Douglas

With more than 30 years in the construction industry, for multiple public and private clients, I can confidently say that healthcare is the most rewarding sector to deliver.

Since joining Tilbury Douglas, I have been impressed with the integrated healthcare sector structure here and the proactive and positive approach of our people. Working with our dedicated advisors, designers and supply chain, we consistently rise to challenges and find improvements to deliver excellent facilities for all stakeholders.

Current challenges provide an opportunity to innovate our design and installation approaches, meeting and often exceeding client requirements. This of course includes decarbonisation of NHS estates, providing social value outcomes, digitalisation and standardisation, as well as controlling cost viability in this ever volatile market.

This capability document outlines our considerable investment in people, training and technologies to improve patient and staff experiences and deliver operational efficiencies. All evidencing Tilbury Douglas' commitment to the sector.

We strive to maintain our excellent track record of delivering award winning health projects, and within this capability document we highlight some of our current thinking, tools and methods developed in collaboration with industry experts, framework partners and suppliers. This includes our industry leadership in the field of technology, being the first business in the UK to deliver a level 2 BIM project and achieve the ISO 19650 standard.

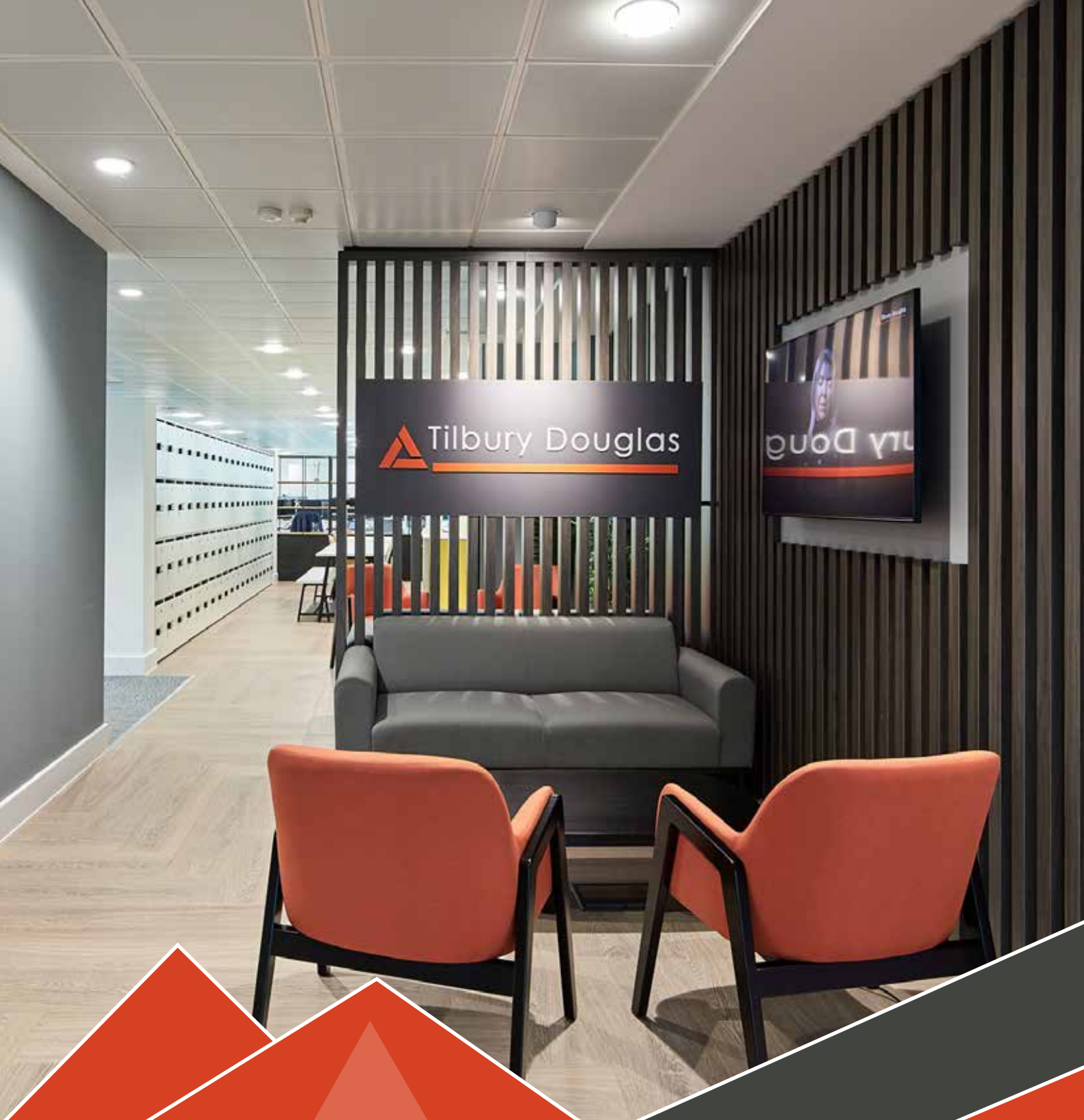
Quicker and smarter creation of concept designs through our award winning in-house Connect Configurator tool provides a web-based application for approved standardised layouts, directly addressing our clients' requirements. The design of whole buildings using prefabricated 3D models gives our clients data literally at their fingertips, providing them with the ability to make informed decisions as the building is designed, including live cost, carbon and time estimates.

The case studies and testimonials bring all of this to life and demonstrate Tilbury Douglas as a contractor of choice in this time of change.

Gordon Stirling

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Understanding our business

Who is Tilbury Douglas?

We are a leading UK building, infrastructure, engineering and fit out company, delivering vital projects across a range of sectors.

With over 130 years of experience in the construction and engineering sector, we are a trusted partner of central and local government and as a top three health sector delivery partner, we remain fully committed to the health and social care sector. Working collaboratively with the NHS, NHS Trusts and other stakeholders for over 40 years.

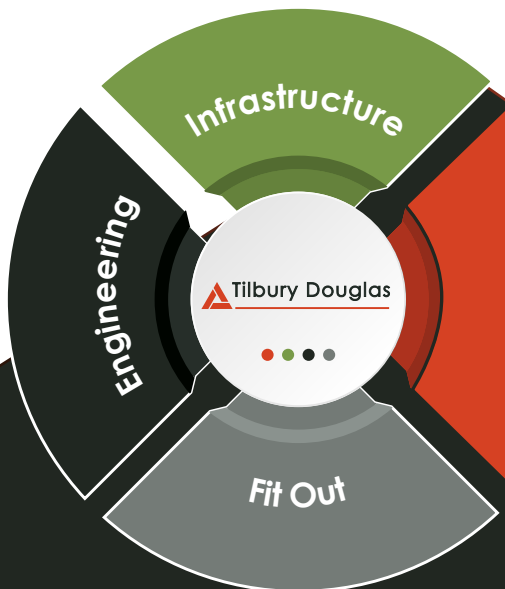
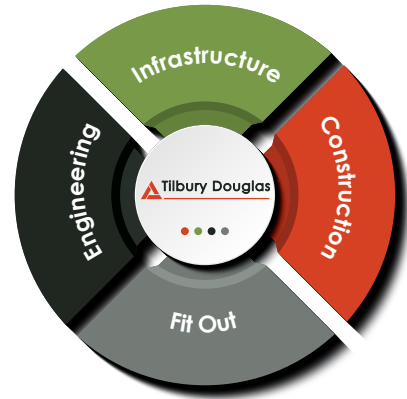
With national coverage and regional office delivery, we guarantee a personalised and professional service. Our construction and engineering teams have a proven track record of delivering healthcare projects in partnership, developing industry leading benefits and innovations together, to provide value for our clients.

Working with us

As collaborative working specialists, we operate many compliant national and regional frameworks to efficiently deliver health projects in alignment with the Construction Playbook's and Constructing the Gold Standard's key policies and themes.

Many of our frameworks include direct award options for critical fast track projects. Please contact us for further information and advice or visit our website.

www.tilburydouglas.co.uk/frameworks/



UK Regional Building

We are on target to deliver £629m of exemplar projects in 2023. As a top three health sector contractor we are fully committed to sustainable and controlled growth, providing experienced and well resourced delivery teams, supported by tried and tested specialist supply chain partners.

Tilbury Douglas has worked with a range of healthcare providers to deliver leading health facilities across the UK. From world class cancer treatment centres to complex refurbishments in live hospital environments, our specialised teams understand the nuanced considerations necessary to deliver a successful healthcare project.

We have long established relationships with Trusts all over the UK, working closely alongside estates departments, clinicians and other key stakeholders.

Experts in delivering capital projects for healthcare

Our regionally located business units have delivered capital projects for more than 50 NHS Trusts.

Our experience is broad, delivering full construction and engineering services for:

- **Primary care**
- **Acute healthcare**
- **Mental health care**

United and supported nationally by Tilbury Douglas's healthcare focussed sector leaders, our teams on the ground have the benefit of shared training, lessons learned and research and development which keeps Tilbury Douglas at the forefront of healthcare delivery.

At Tilbury Douglas, we are not just focused on the execution of our healthcare projects; we are thought leaders, expanding on our knowledge to inform future briefs and developments. We align with national and regional bodies and organisations, such as IHEEM and HEFMA to share and understand best practice. We have the resources and flexibility to deliver projects of all sizes and scope, up to £200m in recent years.

For many of our customers, maintaining and improving existing estates is the best option for cost, carbon and project viability. Besides the many new-build projects that Tilbury Douglas undertakes, we have worked on numerous refurbishment programmes and are able to bring the same level of skills, understanding and competitive pricing to all types of healthcare projects.



Clients from Walsall Healthcare visit progress at Walsall Manor Urgent & Emergency Care Unit, a major new development for the Midlands

A safe pair of hands

Our regionally located business units have delivered capital projects for more than 50 NHS Trusts. Our experience is broad, delivering full construction and engineering services and solutions.

Our dedicated teams are one of the key reasons why our client retention is so high. On average our teams work with the same client over eight times and with each new project bring added value in acquired knowledge and streamlined continuity. Where relationships are well established, clients will work with the same teams, and with Tilbury Douglas boasting consistently low voluntary churn rates, we are able to make this possible. Customers regularly report excellent working relationships, and a naturally collaborative culture, making the process of construction smooth and enjoyable.



Working with industry experts

Collaboration is always important, and particularly critical on healthcare projects where specialist knowledge is required. We work with some of the UK's most competent consultant teams, renowned for specialist areas of healthcare design. □ We recognise that every faction of healthcare design has different requirements. As much as we like to bring lessons learned to every new project, we also recognise that solutions need to be aligned to our clients' specific needs for their facility.

Careful consultation

Healthcare projects can present complex design challenges. We believe in working closely with all stakeholders to develop solutions that balance core needs with flexibility.

As a company, one of our four core values is that 'everybody has a voice', and we extend this sentiment to our project work. We use a number of consultation techniques and technologies that are designed to get the most meaningful feedback from a wide variety of stakeholders. We promote regular consultations with clinical staff, maintenance staff and other stakeholders, working efficiently around their busy schedules. Consultation continues right through to the end of our projects, where we undertake a 360-degree post occupancy review to understand how the building is working for clients and end users, and use this learning to benefit future engagements.





Health, safety & wellbeing

The health and safety of our sites and your staff, patients and visitors is the most important of all of our agendas. As a company, health and safety is the top priority, and a tangible part of everyday business.

Healthcare projects are often situated within live complex estates and require careful planning to ensure care can still be administered on the site safely, with minimal disruption to services.

Our health and safety planning is based on our Tilbury Douglas i-Care strategy, a seven point plan that aims to make health and safety leaders out of every member of our team, as part of a holistic safety-first culture. Besides the physical health and safety, looking after mental health is as much of our culture as it is the work we deliver. Spurred on by worrying statistics around mental health for construction workers, we have taken action as a company to care for not only our own staff, but our supply chain too. Our mental health awareness scheme ensures Tilbury Douglas Mental Health First aiders are deployed on every site, providing support and training to all site workers.



We've received RoSPA Awards for our health and safety achievements

Creating cost certainty

Healthcare is a core sector for Tilbury Douglas and we have significant benchmark data. We understand how to create value for money solutions, working daily with healthcare providers all over the country to ensure projects are realised within programme and agreed budgets.

Our expert pre-construction teams leave no stone unturned when it comes to developing a robust design and cost plans. We will work from first principles with design teams to engineer value, reduce waste and streamline delivery. Our ingenuity in construction techniques, sequencing, and collaboration with our supply chain enables us to deliver the best possible price, which can be defined to you at the earliest stage. Our breadth of experience has allowed us to develop recommended standardised specifications for bespoke healthcare environments.

We are not afraid to have honest conversations about affordability so that we can unlock proactive and collaborative ways forward to achieving your desired outcomes within budget. Besides ensuring all of the key strategies of our construction management stack up financially, we also sweat the small stuff. Often innovation, even at a minutiae level, can save thousands of pounds. These are the continuous improvements that we love to share between our teams so that we can create 360-degree excellent value for money on all our schemes. We operate with transparency and fairness when it comes to numbers. This is one of the key reasons why our clients select us time after time.

Aligning to the Construction Playbook

Modern Methods of Construction (MMC)

By harnessing MMC, we trigger predictable outcomes through greater control over our construction processes. Our teams mitigate the risks of poor weather conditions, labour shortages and unforeseen disruptions due to the regimented factory settings characteristic of this delivery approach.

We are increasingly adopting MMC in our delivery process under our ethos of continuous improvement. As a result, we share the below benefits with our people, customers and communities.

Collaboration



- » Standardised processes bring opportunities for early engagement
- » Smoother information exchange between teams due to more interoperable software in design, construction and handover

Safety



- » Factory fabrication reduces on-site risk of injury
- » Automation cuts lifting-related injuries and risks of falling
- » Safety designed into component design and manufacture

Quality



- » Factory settings and automation provide specific quality parameters
- » The results are reduced need for on-site snagging and fewer defects

Sustainability



- » Waste is designed-out of a component due to factory production
- » Off-site building components can be reused on future schemes
- » Reduced on-site noise and dust

Cost



- » Reduced labour costs.
- » Speed of delivery, driving programme savings
- » More efficient use of resources (time, labour and materials)

Productivity



- » Increased delivery speed
- » Predictable outcomes from pre-construction to handover
- » Reduced disruption

Sustainability & Zero Net Carbon

The NHS 'Delivering a Zero Net Carbon Health Service' document is one of the key public sector papers that has informed our own award-winning People, Planet, Performance sustainability strategy.

Undoubtedly there are many challenges concerned with a 'Net Zero Carbon' NHS estate, particularly in the existing parts of the estates that are subject to capital refurbishment plans. It is therefore essential for customers to partner with a single point deliverer who is knowledgeable, experienced, and committed to achieving Zero Net Carbon on your capital programme. Tilbury Douglas has worked with experts from across the sector to develop a Zero Net Carbon Strategy for our customers which promotes flexibility and value for money. We work with the Trusts to understand the potential for Zero Net Carbon across the whole estate or on a project-by-project basis, understanding there will not be one solution for all assets. Tilbury Douglas's strategy is based on:

Smart design principles:

- **Designing out operational and embodied carbon through design optioneering at the earliest stages with least impact on cost**
- **Whole Life Cost and carbon comparisons**

Operational carbon:

- **Preventing energy usage in the first instance, i.e passive approaches**
- **Reducing carbon through the latest efficiencies in M&E design and installation**
- **Digital Twin to support proactive operational efficiency**

Embodied carbon:

- **Using recycled and low-carbon materials wherever possible**
- **Specifying materials that have a cradle-to-grave lifecycle**
- **Planning for end-of-life recycle options**
- **Comprehensive waste strategy**

Offsetting options:

- **Offsetting operational carbon through renewable energy strategies**
- **Offsetting embodied carbon through positive ecology planning**

Supply chain sustainability:

- **Development of circular economy / eco-supply chain**
- **Working with our current local supply chain partners to upskill and develop greener working practices and products**

Red Kite View, Leeds. BREEAM-Excellent building, one of the first of a new-generation of hospitals in the UK operating with net zero carbon.



Digital

Construction is undergoing a digital transformation, that focusses on innovation as an ongoing standard.

With the expertise of our Digital Team, we were the first main contractor to successfully pilot Building Information Modelling (BIM) Level 2 on a Ministry of Justice project in 2012. This achievement, combined with our dedicated digital resource, highlights Tilbury Douglas as a long-standing and leading adopter of technology in construction. As part of our ongoing strategy, we have strengthened our investment in our Digital Team. They spearhead the implementation of technology, data and sophisticated software across our engineering, infrastructure and fit-out operations. They lead the implementation of industry standard processes, technology, and training across our engineering, infrastructure and fit out operations, in line with our strategic goals:

Digitisation

- Digitise customer experience and day-to-day operations to improve efficiencies
- Lean process design, streamline processes and minimise waste, leading to continuous improvement

Intelligent process automation

- Maximise efficiencies and empower our employees to do more by removing repetitive and admin-heavy tasks
- Advanced analytics provide intelligence to facilitate decision making. Through leveraging their expertise and in alignment with the Construction Playbook, the Digital Team embeds data and technology throughout our works, bringing benefits in cost, sustainability and quality to our clients



Welcome to

connect

A Tilbury Douglas Solution

Information management drives Connect. It enables a baseline digital offering that empowers our people through a set of core technologies, processes and governance that can be applied to any scheme.

It positions digital tools at the centre of our operations, allowing our baseline offering to include solutions based on robust outcome-focussed selection processes.

A modular approach to technology, Connect allows us to continually evaluate our technology ecosystem to ensure tools are always fit for purpose and achieve the desired results. By doing so, we are able to enhance or replace tools appropriately.

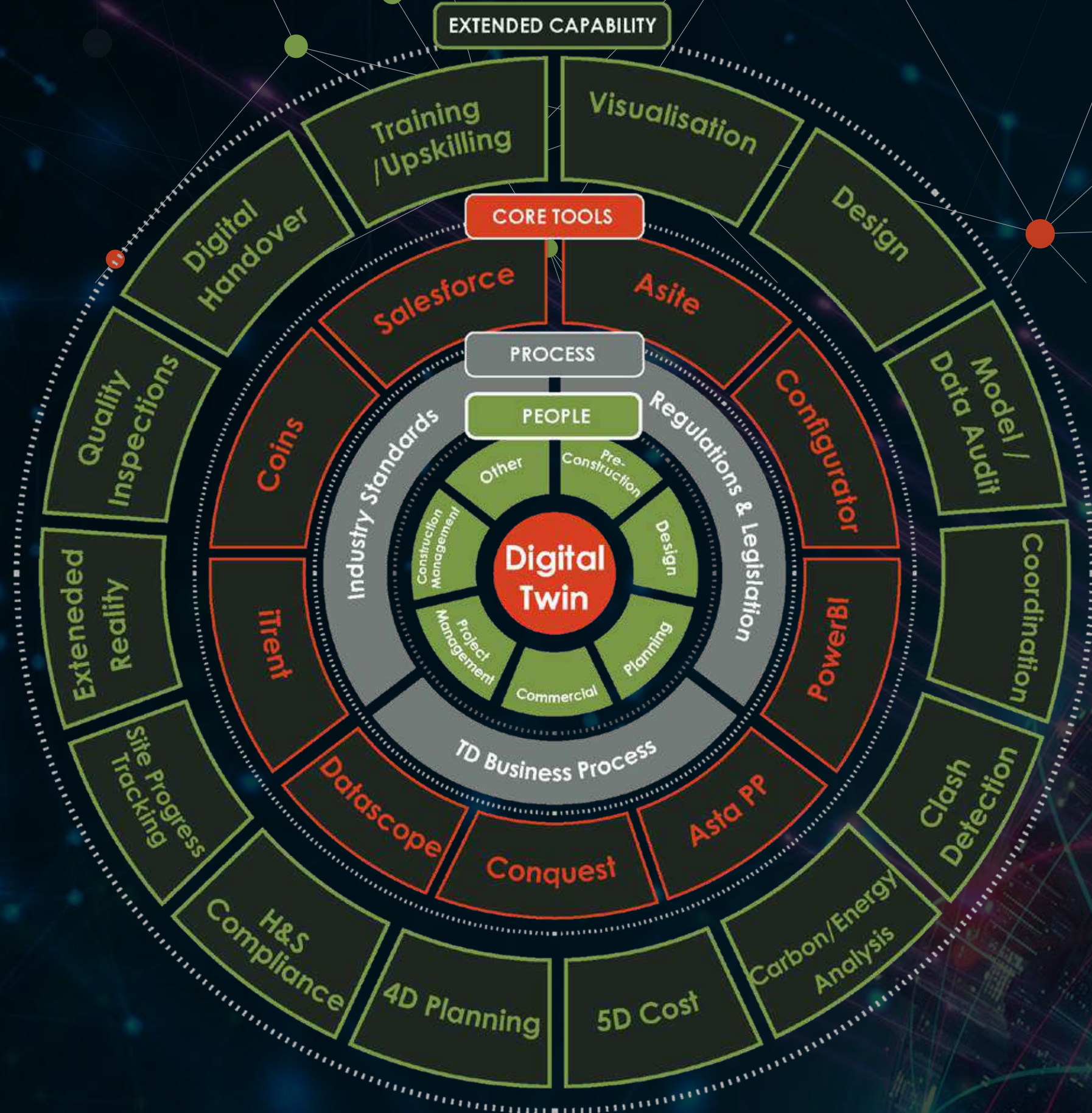
This baseline offering and standardised approach eliminates the need for new project strategies. As such, planning and coordination of teams and resources becomes predictable and leads to assured outcomes.

These actions are refined and repeated in subsequent projects. Efficiency becomes a matter of best practice.

The buy-in of our process owners is integral to information distribution throughout the business.

They manage our vetted tools within Connect, enabling training through the platform where required. They also support the Digital Team in ensuring that our tools are suitable and provide best value.

Driving information management across our digital transformation, Connect is also ISO 19650 compliant.



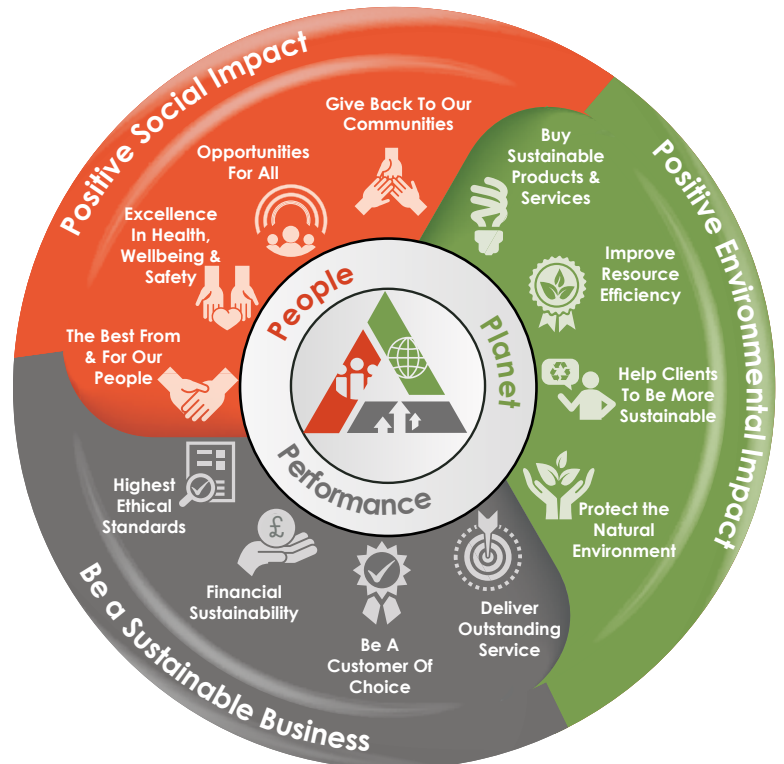
Creating meaningful social value on projects

Tilbury Douglas's sustainability strategy People, Planet, Performance (PPP), ensures a joined-up approach for our business to plan, implement and record sustainable value. PPP is a comprehensive approach to social value and sustainability, providing clarity and governance to Tilbury Douglas project teams and customers. It enables us to benchmark how we conduct our social, environmental, and sustainable business activities. PPP provides a framework to deliver high impact social value outcomes and support our clients to deliver their Social Value Act 2012 and PPN 06/20 obligations.

The design of PPP ensures an inclusive strategy, reconciled against key industry guidance as well as government social and environmental priorities. This includes;

- **Donations in kind – £125k**
- **Volunteer hours – 1987**
- **Education engagement hours – 789**
- **Apprentice weeks – 5422**
- **Site tours – 109**
- **Work placements – 497 weeks**
- **Total SROI – 33%**
- **Total Social Value Pounds – +£130m**

Our approach is thorough, while offering simplicity and flexibility to our customers. We ensure all of the fundamental aspects of sustainability are in hand, while providing a platform for a bespoke plan that contributes meaningfully to the communities that we work within to leave a sustainable legacy.





Case studies

Aintree Hospital



Project Name - Redevelopment of Emergency Department & Theatre Suites, Aintree Hospital

Location - Liverpool

NHS Client - Liverpool University Hospitals NHS Foundation Trust (LUFT)

Principal Supply Chain Partner - Tilbury Douglas

Contract Value - £21.6m

Start on Site - June 2021

Completion - July 2023

Aintree Hospital

Project description

LUFT partnered with Tilbury Douglas and Arcadis, working collaboratively to deliver the upgraded Urgent Care and Trauma Centre. The new two-storey extension includes two hybrid operating theatres, a dedicated stroke assessment unit with CT scanner and improvements to ambulance drop off bays.

The dedicated Stroke Assessment Unit ensures patients are swiftly clinically assessed using the CT scanner, so treatments with either chemical or surgical interventions are administered as soon as possible to ensure the optimum recovery outcome.

The Hybrid Theatres on Level 1 allow the clinical team to conduct real-time x-ray imaging during surgery, meaning patient treatment times are reduced, thus increasing the number of patients that can be treated.

The design will improve the efficiency of the centre and importantly patient experience offering a more comfortable environment with a modern design produced by interior designers who worked closely with the clinical users to ensure the colours, finishes and IP&C requirements were met.



Innovation

The team used digital solutions to build the project 'better, faster and greener' with energy efficiency high on the agenda for the team to meet NZC targets. We designed the building and the building's position to do much of the important work for us, for example looking at shading and bringing innovative LED lighting solutions in areas that had no natural daylight.

We applied a 'Fabric First' approach to the building design. This involved maximising the performance of the components and materials that make up the building fabric itself, with high levels of

façade performance and airtightness, reducing unnecessary energy consumption. This will reduce capital and operational costs and reduce carbon emissions whilst reducing ongoing maintenance costs.

Modern Methods of Construction also supported the reduction in carbon, with all mechanical and electrical components manufactured offsite significantly reducing site activity due to its close agencies to A&E and maternity minimising disruption to the Trust.



Benefits

Through our partnership:

- Health professionals can deliver the care that patients deserve in a space fit for purpose with an enhanced layout allowing them to manoeuvre more quickly, driving clinical efficiencies.
- The extra assessment bays and expanded theatre and recovery spaces improve flow through the departments, and additional urgent and emergency care capacity brings down waiting times in preparation for winter pressures.
- Local residents have a state-of-the-art facility that is sustainable and modern, creating a healing environment whilst improving the patient experience.

The project was delivered on time, with maximum financial gain share, zero accidents and £15m Social Value return on investment for the local community.

Social Value

Investing in the next generation of construction professionals to address the industry skills shortage and keeping the pound local was a key focus for Tilbury Douglas. This is how Tilbury Douglas creates a sustainable workforce and does its part to deliver on the government's Social Value Model.

Headline results included: 93% local spend, 100% SME spend, 80 hours educational outreach, eight new employment opportunities (including two ex-service men and 209 apprentice weeks).

The team also gave 214 hours volunteering time and £12.7k of donations in kind to transform an inaccessible and underused courtyard into a respite garden to help alleviate stress among hospital staff, patients, and visitors. This contributed to the team achieving the top Considerate Score of 45/45 for respecting the community, caring for the environment and valuing the workforce.

Walsall Manor Urgent & Emergency Care



Project Name - Urgent & Emergency Care Centre

Location - Walsall, West Midlands

NHS Client - Walsall Healthcare NHS Trust

Principal Supply Chain Partner - Tilbury Douglas

Contract Value - £40m

Building Size - Overall GIFA 5,964m²
(new build 4,864m² and 1,100m² refurb of existing A&E)

Start on Site - October 2020

Completion - March 2023

Walsall Manor Urgent & Emergency Care

Project description

Tilbury Douglas was appointed as single point deliverer for Walsall Manor Urgent & Emergency Care Centre, a two-storey new build facility to increase capacity and supporting an innovative integrated model of emergency, urgent and ambulatory care.

The state-of-the-art two-storey facility offers the hospital 4,864m² of optimised acute care, including:

- Rapid assessment & Urgent Treatment Centre
- Paediatrics Assessment Unit (PAU)
- An Acute Medical Unit
- A Medical Ambulatory Unit (MAU)
- Provision for contaminated zoning
- Same day emergency care (SDEC), alongside safeguarding for mental health within the new centre



Walsall Healthcare NHS Trust opened its doors to the new Urgent and Emergency Care Centre (UECC) at Walsall Manor Hospital in March 2023, setting a new precedent for UK emergency healthcare environments.

Within the first couple of months of opening, the Trust rose significantly in NHS performance tables, thanks to the clinical transformation the new UECC has enabled.

Delivered by our expert healthcare construction team, this project has optimised a challenging site, reinvented the clinical model for the Trust, pushed construction playbook agendas and delivered excellent value for the NHS moving forwards.

Since opening, the UECC has increased the Trust's admissions capacity by 50%, accommodating up to 90,000 admissions annually, creating flexibility around patient pathways and future proofing for possible critical scenarios, as seen in the pandemic.

Walsall Manor Urgent & Emergency Care

Tilbury Douglas



How clinical needs shaped the design of the new Urgent & Emergency Care Centre

As often the case with the process of funding streams, by the time Tilbury Douglas was appointed to deliver this project, the original design for the new building was already outdated and unfit for the longer term needs of the Trust.

Advances in the way patients are managed in Emergency and Acute Care and clinical standards had altered the requirements for the centre, for example the RCPCH 70 standards, the Five Year Forward View, new radiology standards and best practice from across the globe.

We engaged a clinical planner to lead a full clinical design to inform the architectural plan.

Translating clinical planning into physical design

The clinical plan was created and reviewed with the key stakeholder groups through a series of engaging workshops. We explored how standardisation and repeatable rooms could bring flexibility and efficiency into both the construction and operation of the facility as well as looking at clinical adjacencies and flows.

We produced mock-ups and tested room sizes with clinical teams, looking at nursing positions, bedhead services heights, and how patient observation could be maximised.

We looked closely at how clinical procedures, and different patient pathways intertwined; for example, developing the Emergency Preparedness, Resilience and Response (EPRR) pathway, we provided a wet decontamination facility that could be connected to Rapid Assessment and Treatment (RAT), and working through the mental health pathways and how we could support this need throughout the facility.

One of the most game-changing strategies for the new design was the transformation strategy for both the front and back door of the hospital. The strategy focused on admission avoidance models, streaming away from Emergency Care wherever possible and discharging patients early from hospital. The back door ensures that emergency care does not become a bottleneck for patients whose next step is elsewhere.

Walsall Manor Urgent & Emergency Care

Translating clinical planning into physical design

Tilbury Douglas' team orchestrated a complex programme of activity, moving services, routes, and accommodations around the site, and an intensive 26-week period of civil works, logistical planning and diversions were required to release the site. We always prioritised health and safety and uninterrupted use of adjacencies and the live blue light route serving the existing A&E.

As is synonymous with a Black Country site, remediation was extensive. Numerous deep mineshafts were identified and ultimately, over 100 tonnes of grout were pored to overcome ground challenges. Delivering the project at the height of the pandemic presented its own challenges; these were navigated and overcome safely. Consequentially, the design was adapted to accommodate additional requirements such as ventilation, installation of medical gases etc.

[Watch our video showcasing our Walsall Manor project](#)



Social Value in all that we do

We delivered 50% Social Value Return on investment on the capital value of this project, equating to £15.2m

In undertaking the project, Tilbury Douglas executed a locally focused Social Value Plan examples include:

- 53 weeks of work placements
- T-level placements with Walsall College
- £5,173 raised for the Walsall Well Wishers fund
- 72% local SME spend
- Two Kick Starters
- Tilbury Douglas MoD work placement partnership we had two Royal Engineers on placement
- Birmingham City College Management Apprentice of the Year winner - Caitlin Walsh
- As part of their 'Give a day of your time' initiative, colleagues built planters and planted donated plants for the hospital garden
- The client and delivery team shared best practice through site tours and seminars at IHEEM/Healthcare Estates

Walsall Manor Urgent & Emergency Care



Innovation to improve sustainability outcomes

MMC was a consideration from the outset. The project was an early adopter of the NHS MMC Business Case compliance requirements, acting as another driver for maximising off-site opportunities, maintenance efficiency was also a key factor throughout MEP design which included:

- 120 Horizontal Floor Modules
- Pre-Packaged Plant
- Horizontal Floor Modules
- Prefabricated Distribution Boards
- Prewired & Pre-plumbed bedhead trunkings

Delivering an energy efficient low carbon solution was another key success factor, the UECC has an 'A' energy rating and has received aims to achieve BREEAM Excellent.

The project was delivered to BIM level 2, utilising digital tools that enhanced the golden thread of information flow, utilising our inhouse technologies such as:

- Matterport scanning
- Use of BIM Collaboration Pro-software assisting offsite prefabrication
- Use of total robotic setting out station to enabling accelerated works
- Improved visualisation on site

A rigorous MMC strategy assisted the delivery team in completing the project on time and within the Trusts £40m budget.

Setting a precedent for future developments

Through innovative design, clinical planning, strong stakeholder engagement, and importantly clear communication the team has delivered an exemplar Emergency Care Facility.

Since opening in March, the Trust are already sharing best practice with other hospital trusts.

Testimonial

It's a wonderful, wonderful facility. I'm incredibly proud that the people of Walsall, and our staff, will receive care and work in such a high-quality modern emergency care centre. I'm excited for the service developments this will enable us to deliver. We're really proud of what's been achieved.

Ned Hobbs, Chief Operating Officer

Red Kite View



Project Name - Red Kite View

Location - West Yorkshire

NHS Client - Leeds and York Partnership NHS Foundation Trust

Principal Supply Chain Partner - Tilbury Douglas

Contract Value - £18.3m

Building Size - 3,671m²

Start on Site - April 2020

Completion - November 2021

Red Kite View

Project description

Red Kite View will care for young people from 13-17 across West Yorkshire, ensuring they need never be more than 25 miles from home for treatment. It has 22 bedrooms with light, modern, and spacious facilities, and private en-suite bedrooms in a comfortable environment. The unit has a range of therapeutic areas, including multi-purpose activity rooms, education rooms, family visiting areas, courtyards, and green communal spaces for young people and staff.

[Watch our video for Red Kite View](#)



Challenges

- The project was successfully delivered safely during the height of the COVID-19 pandemic. We innovated with new working practices and technologies, not only keeping staff and all stakeholders safe at all times but working flexibly to change the design of the new building.
- Following the onset of the pandemic, the Trust wanted to implement improved safety measures that required amendments to the design of the unit. Using the capabilities of BIM we explored solutions to adapt the internal layout to provide socially distanced space inside the building, balanced against cost, programme and planning requirements.
- The solution comprised extensions to the ground floor and first-floor areas to accommodate increased room sizes throughout the whole building.



Social value

Outstanding social value outcomes have been delivered, despite the project being delivered during the height of the COVID19 pandemic, including a £44.6m injection within the local economy. The design and construction generated 10 new jobs and supported 15 work placement days and 293 apprentice weeks. 83.4% of subcontracts were placed locally within a 30 mile radius, including 76% placed with SMEs

Client Satisfaction 10/10 customer satisfaction and postoccupancy evaluations of 94% service user and staff satisfaction levels. It delivers operational benefits and improved care.

Award winning

Constructing Excellence in Yorkshire and Humber 2022

- Building Project of the Year
- Integration and Collaborative Working
- Design in Mental Health Awards 2022
- Project of the Year - New Build UK.

Testimonial

This fantastic new facility was successfully delivered safely during the height of the pandemic. Tilbury Douglas innovated with new working practices not only keeping staff and all stakeholders safe at all times; but providing flexibility to change the design of our new building.

Dawn Hanwell - Deputy Chief Executive,
Leeds and York Partnership NHS Foundation Trust

Prince Charles Hospital



Project Name - Prince Charles Hospital Redevelopment

Location - Merthyr Tydfil

NHS Client - Prince Charles Cwm Taf University Health Board

Principal Supply Chain Partner - Tilbury Douglas

Contract Value - £32.6m (phase 1 £5.6m, Phase 2 £27m)

Building Size - 3500m²

Start on site and Completion - Phase 1a: Oct 2017 - Oct 2018,
Phase 1b: Dec 2018 - April 2021, Phase 2: Nov 2020 to 2026

Prince Charles Hospital

Project description

One of the UK's largest refurbishment projects, the majority of the ground and first floors of the hospital are being remodelled to create an efficient layout, to provide a modern healthcare service. The existing walls will be thermally upgraded and the existing windows replaced with modern efficient alternatives to match the current modern windows on the site.

The departments being provided are outpatients, physiotherapy, maxi-facial, endoscopy, oncology, pathology, pharmacy, kitchen and dining, radiology, critical care, theatres, and bulk stores, along with support services for each area. Several extensions will be constructed to create the required space and aid wayfinding issues. These include a physiotherapy pool, MRI, outpatients waiting area, an office extension to maxillo-facial.

Plant room extensions are also being provided to create a modern healthcare environment which complies with current HBNs and HTNs. Several plant rooms will be located on top of the existing building as they need to be local to the department.



Phase 1A

This enabling works contract provided decant accommodation, in advance of the refurbishment works to the main hospital. Works included provision of a temporary kitchen/dining facility; extension of existing ward kitchens; temporary bed store; remodelling an area for ambulance response; for the refurbishment of areas to provide decant space for the administration department; new cash office; new clean and dirty linen storage facilities; improvements to existing road access; new drop-off areas for ambulances and patients; and provision of additional car parking.

Phase 1B

Works comprised of the following:

- Full strip out of kitchen and dining areas and provision of new kitchen, dining areas, and pharmacy.
- Provision of new staff changing area within the courtyard.
- Refurbishment of first floor main switchrooms.
- Construction of new plant rooms.
- Construction of new car park on the site of the old helipad.
- External infrastructure works (above and below ground).

Prince Charles Hospital



Phase 2

Phase 2 is the largest phase in the overall scheme and will be split into six sections & includes three refurbishment projects, one new build extension, two modular two-storey buildings and major temporary infrastructure & refurbishment of a large area of the Pathology Department. Two new extensions will also be constructed, together with a new main entrance. A new MRI building will be provided, together with a new Trauma Link to the existing building. Critical Care and Pathology will be refurbished.

[Watch our video for Prince Charles Hospital](#)




1025



**STAFF HOURS
DONATED TO
SCHOOL EVENTS
& ACTIVITIES**

3708



**PUPIL
INTERACTIONS**

2240



**TRAINING
WEEKS**
(Apprentice and Trainees)

52



**APPRENTICE
OPPORTUNITIES**

12



**COMMUNITY
PROJECTS**

ASI Medical



Project Name - One Welbeck Street

Location - London

NHS Client - ASI Medical

Principal Supply Chain Partner - Tilbury Douglas

Contract Value - £28m (£21m stage 1 and £7m stage 2)

Building Size - 3,901 m²

Start on Site - November 2018

Completion - August 2020

ASI Medical

Project description

The development on Welbeck St in central London for ASI Medical comprised the conversion of 5 floors of CAT A office space, transformed into private healthcare accommodation, including consulting rooms, clean / dirty utilities, nurse bases, offices, reception / waiting areas, procedure rooms, operating theatres, imaging suites, radiographers bay and additional ancillary spaces as well as the supply of additional AHUs and generators to the roof.

Phase 1 consisted of three operating theatres, multiple procedure rooms, new reception, patient waiting areas, consulting rooms, recovery pods, office space, ancillary areas, and we also installed specialist medical equipment. Works took place from the basement to Level 3

Phase 2 works were awarded due to the outstanding results of Phase 1. The team smoothly delivered multidisciplinary examination rooms, specialist facilities and suites, clinical labs.



Logistical challenges

- Constrained inner London site, no loading bay, adjacent to other construction sites, traffic restrictions due to one way system & no holding area. We held regular workshops with the client to plan and schedule works minimising the effect on the operational phase 1 facilities in addition to other occupants of the building. We maximised use of prefabrication; to reduce trades on site and provide enhanced quality.
- Site team and supply chain partners conditioned in developing solutions that minimise impact on congested, live acute hospital sites.



Social value created

Six of our team members volunteered their time to decorate a homeless shelter close to the ASI Medical building. The Marylebone Project helps single homeless women, many of whom have had to leave home to escape domestic abuse. The team also supported HFT, a national charity supporting adults with learning difficulties. HFT were keen to use some of their outdoor space more productively, so we created a sensory garden for service users.



High quality finishes

To reflect the ASI brand



High quality finishes

To reflect the ASI brand



Wythenshawe Hospital



Project Name - Wythenshawe Emergency Department

Location - Manchester

NHS Client - Manchester University NHS Foundation Trust

Principal Supply Chain Partner - Tilbury Douglas

Contract Value - £11m

Building Size - Overall GIFA 3,696 m². New Build – 2,195 m², Refurb – 1,501 m²

Start on Site - Feb 2017

Completion - Feb 2019

Wythenshawe Hospital

Project description

The works were phased in 3 stages. The first phase involved the construction of a 2,195m² new build 3 storey extension to the front of the live existing Emergency Department (ED) to provide new triage, major and minor injury treatment areas, a waiting area, reception and new dedicated emergency corridor with separate ambulance and ambulant entrances.

The second stage was a major internal refurbishment to the existing department to provide new resuscitation bays, Paediatrics ED X-ray rooms, and the third phase provided improved relatives facilities, GP offices, seminar rooms and improved staff facilities.

The existing unit remained fully operational at all times whilst the ED was redeveloped with existing services maintained by a programme of decanting and relocating between phases.



Innovation

- Created a significant programme benefit in providing a 'slab first' approach as opposed to the traditional sequence of erecting the structural steel frame and then installing the concrete ground bearing slab. This created a clean working environment from the outset, facilitated the tracking of access equipment for the steel frame erection and also assisted in envelope works.
- We employed BIM technologies for designing, planning and the physical installation of the works. Using Trimble BIM enabling the setting out equipment for accuracy and co-ordination.
- Rationalised the palette of envelope finishes and in high level plant room areas amended composite cladding for more cost effective through colour render panels.
- The room completion sequence was agreed with both the Client team and the Clinicians to ensure this was co-ordinated with their decant and relocation thoughts. This in addition to early soft landings engagement resulted in our re-sequencing of our hand back of areas to provide the new Resuscitation area 4 weeks earlier than originally planned.

Wythenshawe Hospital

Tilbury Douglas



Benefits



Testimonial

Tilbury Douglas were meticulous in the execution of this project. The Trust could carry on their day to day work without disruption or down time throughout the two years Tilbury Douglas worked on site

Keith Bennett - Divisional Director
Manchester University NHS Foundation Trust

Waterfall House

Project Name - Waterfall House

Location - Birmingham

NHS Client - Birmingham Women's and Children's NHS Foundation Trust

Principal Supply Chain Partner - Tilbury Douglas

Contract Value - £27m

Building Size - 7,500m²

Start on Site - April 2016

Completion - July 2018

Waterfall House

Project description

Design and build of a 4-storey, 7,500m² children's ward at Birmingham Children's Hospital with a Rare Diseases Centre, theatres, wards, outpatient and teenage cancer departments on a constrained inner city site.

Design co-ordination

We embraced Level 2 BIM principles with a fully coordinated model. We held fortnightly federation and clash detection reviews. Our BIM issues log saved time and cost by removing structural and service coordination issues. We identified 430 clashes; Benchmarked at £3K per clash and 10% reaching site, we saved £129K. 3D BIM model images allowed clinical staff to understand room layouts in more detail. Access and maintenance reviews were more interactive, using the BIM model to walk through plant rooms and over the roof, giving the estates team thorough understanding of proposed plant positions.



Construction co-ordination

Building in a tightly restricted central Birmingham site at a live hospital required robust leadership from our PM. Maintaining the programme while ensuring the hospital remained fully functional were key coordination factors. Our PM liaised daily with the Estates Department and ensured appropriate staff attended key programme meetings to gain a continued and collective understanding of the works and impact on the hospital. The resulting close relationships enabled swift clarifications and changes to our construction process mitigating any impact on the hospital.

Handover

Handover took place on the agreed date, within budget and exceeding quality requirements. We used a GSL approach as an initial framework for the Client to select their preferred 'soft landings' option. From Design Stage meetings, we streamlined the process in-line with Trust's requirements, with emphasis on demonstrations and operational commissioning.

Waterfall House



Innovation

£50,000
SAVING
FROM USING STANDARD
COMPONENTS WITH RESULTING
8 WEEK SAVING
ON PROGRAMME

600m²
LABORATORIES
FUNDED
FROM THESE
SAVINGS

SITE TEAM
RAISED
£26,000
FOR HOSPITAL
CHARITY



Testimonial

Tilbury Douglas identified the benefits of using repeatable rooms, and standard components in their Expression of Interest. Not only did they incorporate these savings into the GMP, they also delivered a design solution that provides future flexibility and will improve patient outcomes.

Graham Seager - Director of Estates & the Built Environment,
Birmingham Women's & Children's NHS Foundation Trust

MEP services at Waterfall House

Completed by Tilbury Douglas Engineering





Placemaking
In care environments

Proton Beam Therapy Centre



Project Name - Proton Beam Therapy Centre

Location - Manchester

NHS Client - The Christie NHS Foundation Trust

Principal Supply Chain Partner - Tilbury Douglas

Contract Value - £125m

Building Size - 15,000m²

Start on Site - June 2015

Completion - April 2018

Proton Beam Therapy Centre

Project description

We delivered the UK's first NHS high energy Proton Beam Therapy (PBT) Centre at the Christie NHS Foundation Trust. This nationally significant, 15,000m² project was delivered on time and within budget. Facilities include three PBT treatment rooms and one research room, treating up to 1,500 patients per year.

Design co-ordination

We invested two years researching and developing knowledge of the specific requirement for building PBT facilities. With our design team we visited PBT projects in Europe and America, capturing experience and lessons learnt at design and construction stage.

We developed three designs and GMPs for the shortlisted equipment vendors in parallel with whole-life costing for each model. Hence the preferred vendor was selected based on an accurate assessment of radiation shielding requirements, geometry and building mass, programme and buildability on a constrained site.

[Watch our video for Proton Beam Therapy Centre at The Christie](#)



Construction co-ordination

There were no stoppages within the main hospital during the works which included pouring 20,000m³ of concrete and installing 1,700 tonnes of steel reinforcement involving 415 lorry movements.

The proactive site health and safety culture ensured that even with over 250 operatives on site at any one time the site was accident and incident free.

Trimble robotic stations enabled exceptional set-out accuracy from the BIM model during installation (e.g. 30m beam line incorporated a 165mm diameter high-pressure pipe, cast in-situ to within 12 mm).

Proton Beam Therapy Centre



Managing interfaces with third parties & building users

We developed a stakeholder engagement plan with the Trust using collaborative tools linked through BIM to ensure stakeholders remained aware of what was happening on site. We provided a 4D BIM model rendering enabling stakeholders to visualise spaces early and comment effectively. Clinicians used virtual-reality headsets to check equipment positions and fixtures/fitings.

Local community interfaces were managed via extensive neighbourhood engagement e.g. monthly newsletters and regular open evenings.

Handover

We used a soft-landings approach to handover. The commissioning plan was aligned in the weeks before handover with the equipment provider's commissioning requirements. We used EndBIM to combine the graphical model and non-graphical data (schedules, drawings, O&M documentation, health & safety files) into a digital asset, giving the FM team and supply chain instant access on portable devices to any maintainable asset.

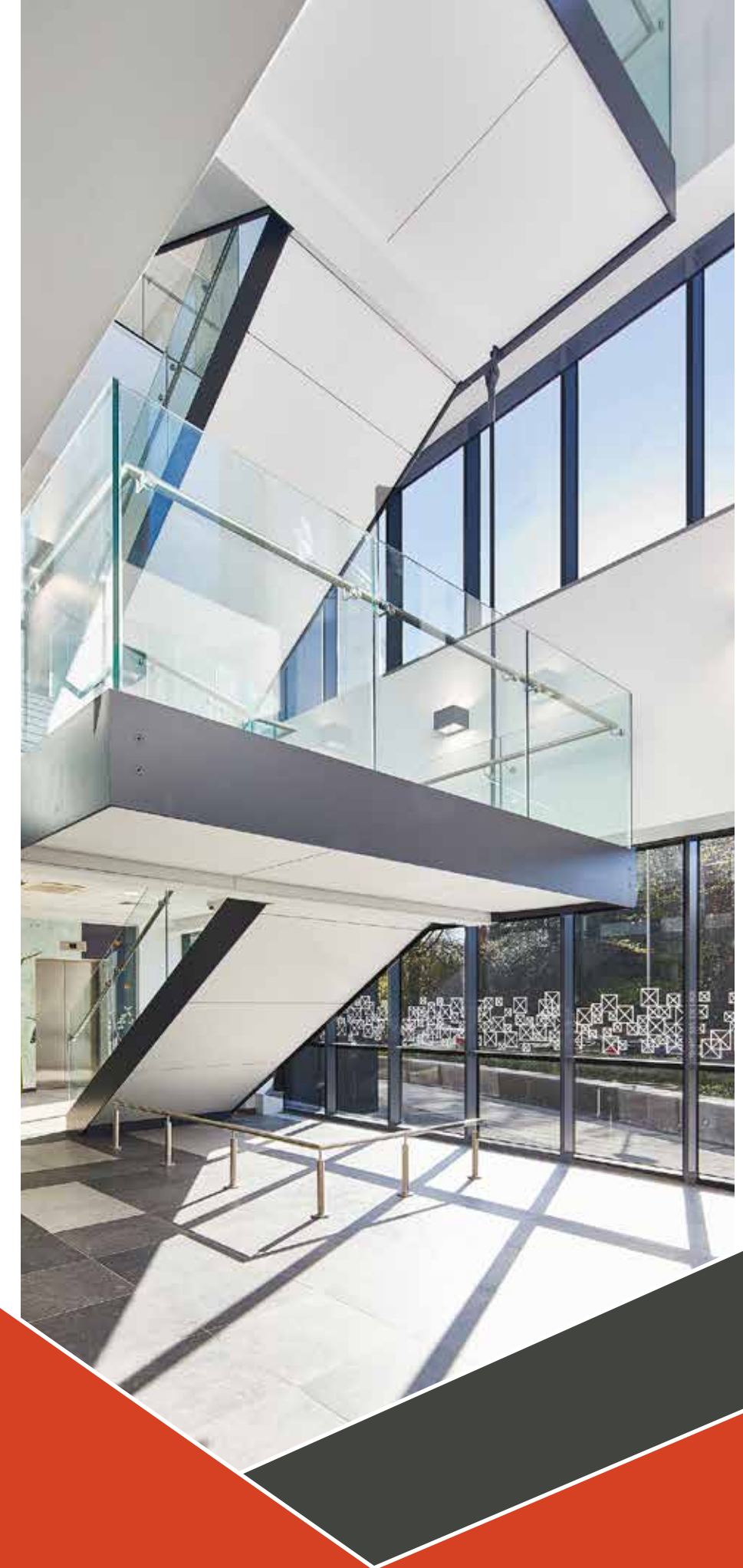
Testimonial

We are delighted to be able to offer this life changing treatment to patients. The delivery of this facility has been one of the most complex and precise projects within the NHS. We identified very early in the project that we needed a construction partner that could work alongside our team. The partnership approach integrated with Interserves technical expertise and energy to solve problems is one of the key reasons we completed on time.

Jason Dawson, - Director of Capital, Estates and Facilities
at The Christie NHS Foundation Trust

A world class facility

Delivered by our North West region



Scottish National Blood Transfusion Centre



Project Name - SNBTS (Jack Copeland Centre)

Location - Edinburgh

NHS Client - Scottish National Blood Transfusion Centre (SNBTS)

Contract Value - £33m

GIFA - 11,500m²

BREEAM - Very Good

Duration - October 2014 to November 2017

Scottish National Blood Transfusion Centre

Project description

Design and construction of the Scottish National Blood Transfusion Service (SNBTS) Centre of Excellence, now known as the Jack Copeland Centre within a live campus at the Heriot-Watt University Research Park, Edinburgh.

The project involved the design and delivery of a complex facility comprising of:-

- Specialist Research and Testing laboratories;
- Specialist GMP (Good Manufacturing Practice) Grade B, C & D clean rooms for the processing of blood, cells & tissues;
- Open plan office social space
- Open atrium/Collaboration space



This highly technical and scientific building is also a place of work and the need to blend the two to give a high class and productive working environment has been achieved in a building which provides transparency across functions, yet is highly controlled through exceptional design.

Structurally, while the majority of the SNBTS facility features a steel framework, the three-storey office element has a concrete skeleton. The concrete contributes to the natural cooling approach in the office area, along with louvred vents above windows that are controlled by a sophisticated building management system. Natural ventilation and photovoltaic panels, combined heat and power systems and enhanced insulation, assisted in the facility achieving its goal of BREEAM very good.

Key project successes

- Keeping blood products apart, yet ensuring people still feel connected with each other and different parts of the building
- Ensuring no crossover between the different workflows within the building due to the potential to increase the risk of contamination of a product
- Achieving air-tightness required in labs to avoid pressure loss without isolating the labs from the rest of the building
- The use of glass throughout the circulation space, and as many glass partitions as possible elsewhere in the facility, produced a transparency that provides visual connection between different areas



Innovation and added value

- Accommodating the facility's different functions in sections adjacent to and above each other, together with extensive use of glass, allowed people to remain connected with each other in different parts of the building.
- The incorporation of two dumb waiter type service lifts, one to take samples from manufacturing to the testing laboratory and the second for the removal of waste. The innovative integration of the dumb waiter lifts within the building provides a value for money space saving solution whilst maintaining essential air pressure differentials between the floors.
- The design detail to the base of the glazed partitions to clean rooms –the floor finishes are flush to the base, with no ledges or lips, ensuring compliance with clean room standards.

Challenges and solutions

- It is essential that interruptions to manufacturing must be minimal. Risk has been significantly reduced by servicing GMP areas using an interstitial space to give full walk on access to plant and distribution systems, enabling maintenance to be carried out without disruption to service delivery in blood work.
- Distribution of services into the GMP space is via flexible connectors to vertical pillars mounted on mobile benching/equipment. This solution maximises flexibility and resilience.
- The first floor is entirely filled with services equipment. In this way the building's design accommodates the sheer volume of services needed and gets main items of plant close to where they are needed.
- The project was developed from an engineering perspective to provide a resilient building with commissioning procedures which meet the GMP and Euralex requirements of the Medicines and Healthcare products Regulatory Agency (MHRA).

Scottish National Blood Transfusion Centre

Social sustainability

- A Community Benefits Strategy Group was managed by Interserve, consisting of Interserve / Kajima, SNBTS, CITB, Edinburgh College, CEIS and the Department of Work and Pensions to assist in the delivery of the community benefit programme.
- A steering group was formed with Heriot Watt University consisting of Interserve/ Kajima, the project design team and SNBTS to deliver benefits to their curriculum through active engagements with the project.
- In addition the project is going was registered as a CITB National Skills Academy.
- Multiple Heriot Watt Student site tours,
- Providing CV advice and mock interviews to Heriot Watt students
- Mentoring of Heriot Watt Students



Testimonial

Having the right facilities in the right place is key to the efficient and effective delivery of our services to patients across Scotland that is why we are working with Interserve Kajima to ensure our blood service is delivered from state of the art facilities. Not only will the new Centre ensure ongoing compliance in an increasingly complex regulatory environment, but it will facilitate the effective introduction of new developments, products and safety measures in a flexible, future-proof building.

Dr Safia Qureshi, SNBTS Project Director

Live Projects

A selection of some of the major healthcare projects that Tilbury Douglas are currently delivering in preconstruction and on site.

Project Name	Client / Organisation	Value
Catterick Integrated Care Campus	NHS North Yorkshire & Defence Infrastructure Organisation	£70m+
Dormitory Eradication	Nottinghamshire Healthcare / Millbrook	£26m
Refurbishment, upgrading & extending facilities	Prince Charles Hospital	£130m
New Accident & Emergency Unit	Dorset County Hospital NHS Foundation Trust	£77m
Oncology Expansion & LINAC	University Hospitals Plymouth NHS Trust	£9m
Reprovision of Shotley Bridge Community Hospital	County Durham & Darlington NHS Foundation Trust	£35m
Urgent & Emergency Care Upgrade Programme	Wirral University Teaching Hospital NHS Trust	£22m
Stepping Hill Hospital Urgent & Emergency Care	Stockport NHS Foundation Trust	£24m
East Midlands Elective Care Centre	University Hospitals of Leicester NHS Trust	£16m
Cancer Wards Relocation	Guy's and St Thomas NHS Foundation Trust	£12m
Princess Royal Hospital Elective Day Case Hub	Shrewsbury & Telford NHS Trust	£13m



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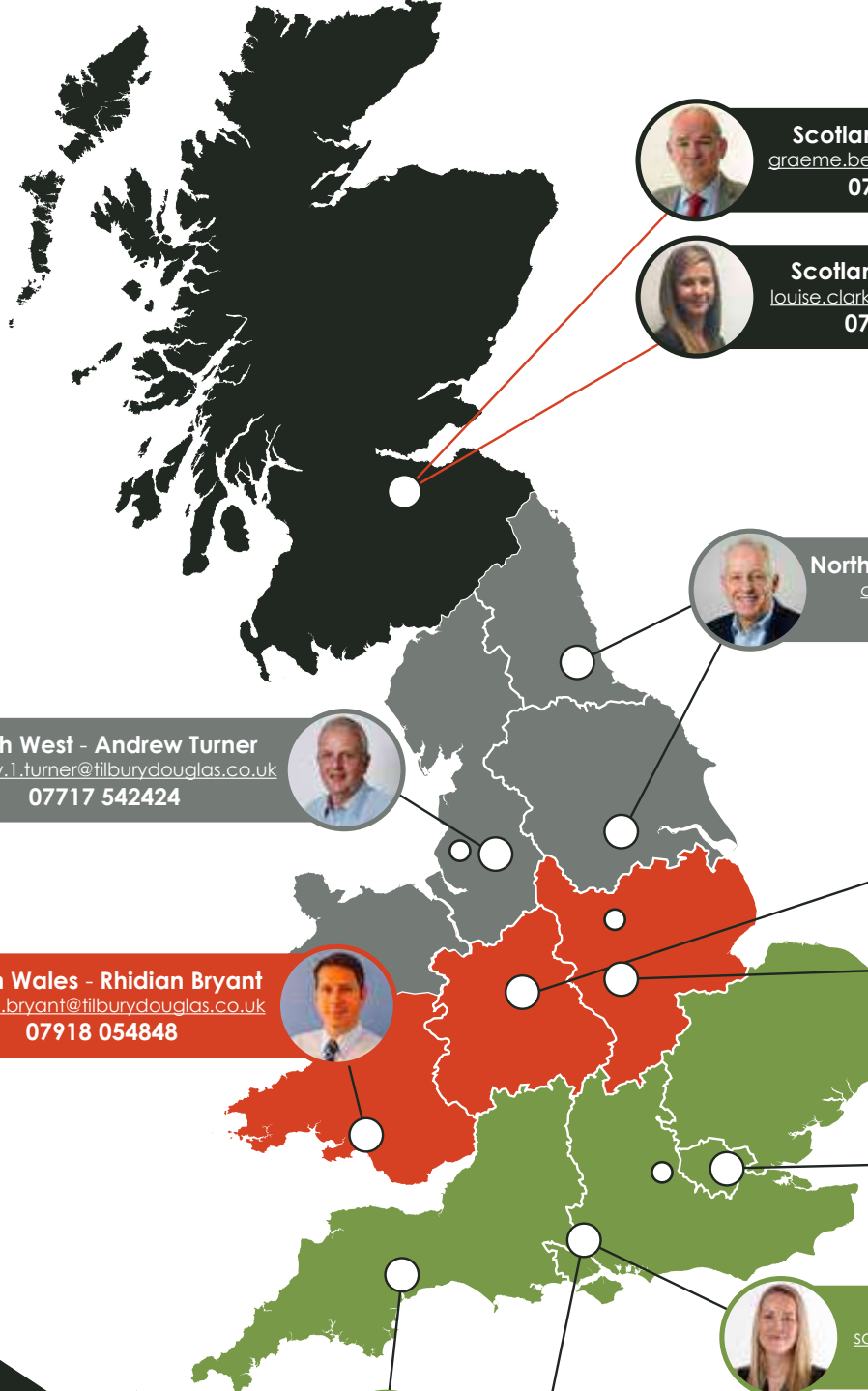


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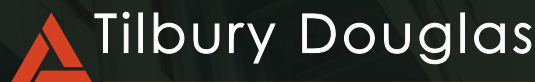
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