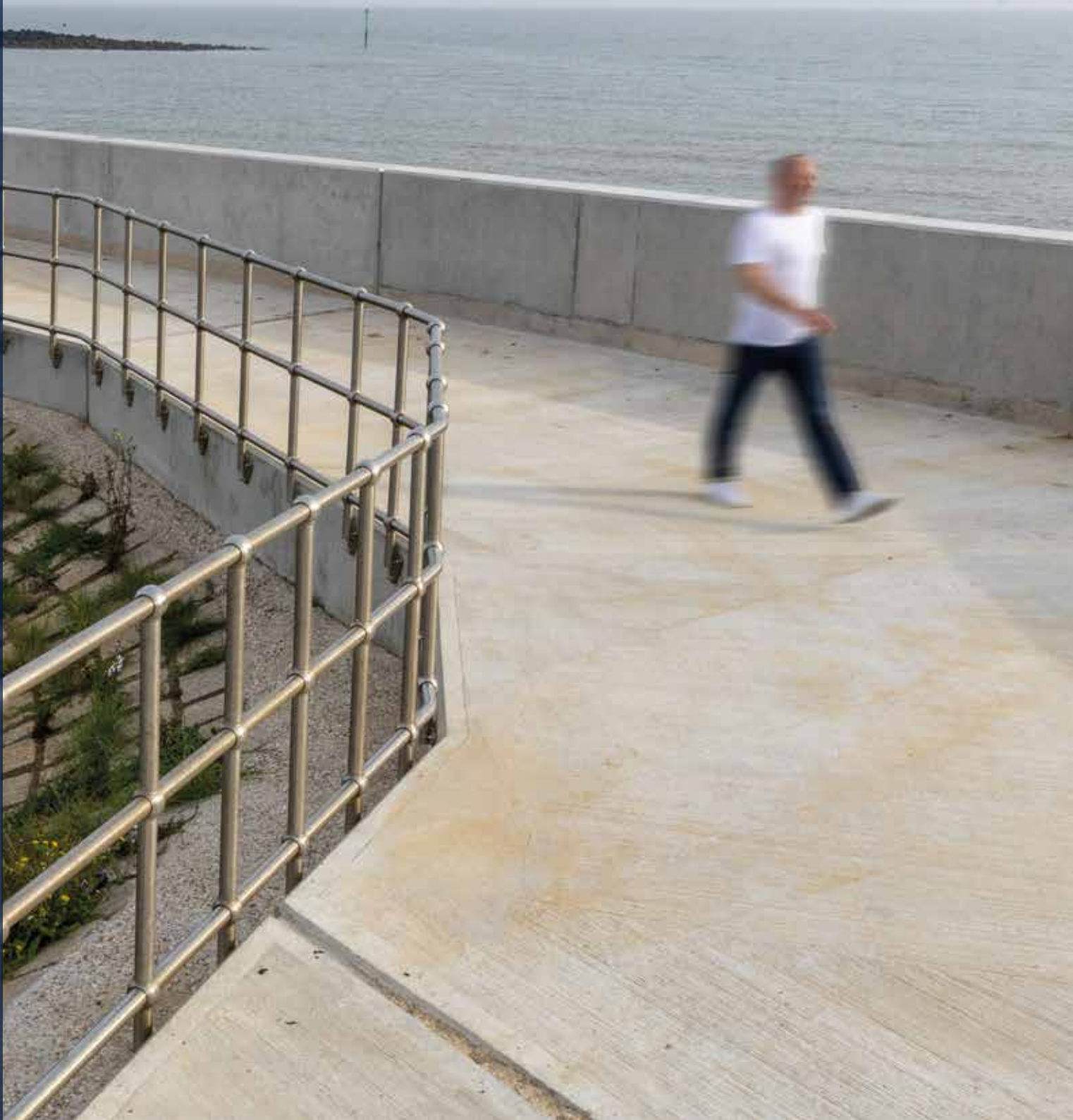




Keeping your
network moving

YEARBOOK **2025**



Keeping your
network moving
by inspiring safe
and sustainable
engineering

Welcome to the KITE Projects 2025 Yearbook

Our work is a growing testament to our engaging clients, their challenging projects, and their outcomes that demand a collaborative and sustainable approach. Our clients tell us we protect their reputation and deliver their aspirations – by innovatively bridging the gap between design intent and design realisation.

We think without limits, and by exploring opportunities to address the challenges they face, and by being positive and outcome focused. We do this by working collaboratively and by constantly looking at ways we can improve our service and product offerings to meet those client and project needs. This is what we call Collaborative Engineering.

Central to making this happen, is the way we operate with integrity in line with our values. Our passion and agility foster creativity, and by being proactive, we deliver innovative solutions to meet our client challenges. This is reinforced through a consultative approach supported by our design process, that brings certainty and consistency.

keeping your network moving

'Networks' mean different things to different people. We like to think of them in relation to the worlds of our clients, where networks – be they a rail or highways network, a network of tunnels – or even a body of staff, visitors, and users (as in the case of our work at Heathrow), that need to flow around an operational network safely.

A network moving, enables customers to reach their destinations when they expect to, whilst being able to manage their journeys safely and predictably. We recognise these are factors of success for our clients, as they are ways in which their performance is measured. A free-flowing network is less attractive

as a newspaper headline, yet it is something we support our clients in achieving. To enable this, means working collaboratively to bring together the client's design, manufacturing, and installation communities, to deliver safe, engineered solutions across access, connection, and control functions, that make up an infrastructure-based network.

This approach to network movement and thinking, reflects KITE Projects' growth across the Rail, Energy, Highways, Water treatment, Flood and Coast and the Airport sectors, where emphasis is on solutions that keep networks moving and services flowing.



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At KITE Projects, we align with cross-industry initiatives to maximise efficiencies, build effectiveness, and deliver value for money that when viewed in the round, endeavour to protect your networks and environment.

Protecting your network

We recognise our clients have a network too. Service users, communities and neighbourhoods are often critical to network movement. A resilient network is often a strategic priority and defined outcome.

With movement and flow comes perceived risk. At KITE Projects, we work to mitigate risk across all aspects of our services and products. We achieve this through inspiring sustainable engineering solutions, that focus on protection to keep all network users safe.

Project resilience and managing risk, is embedded in our processes and throughout our services and products across Access, Connection and Control.

Access is consideration for how we ensure all users of our installations are protected – be they workers active on projects, through to citizens in community settings.

Connection applies to how networks can be protected through how they interface with their surroundings. This encompasses everything from how users need to feel safe, how materials are used to ensure sustainability targets, and how products are installed to minimise corrosion.

Control is coming more into focus as our awareness of climate change grows. We take a holistic approach, in understanding the impacts of how an installation commissioned in one area, may impact another location close by.

At KITE Projects, we align with cross-industry initiatives to maximise efficiencies, build effectiveness, and deliver value for money that when viewed in the round, endeavour to protect your networks and environment.

Building a culture of Innovation

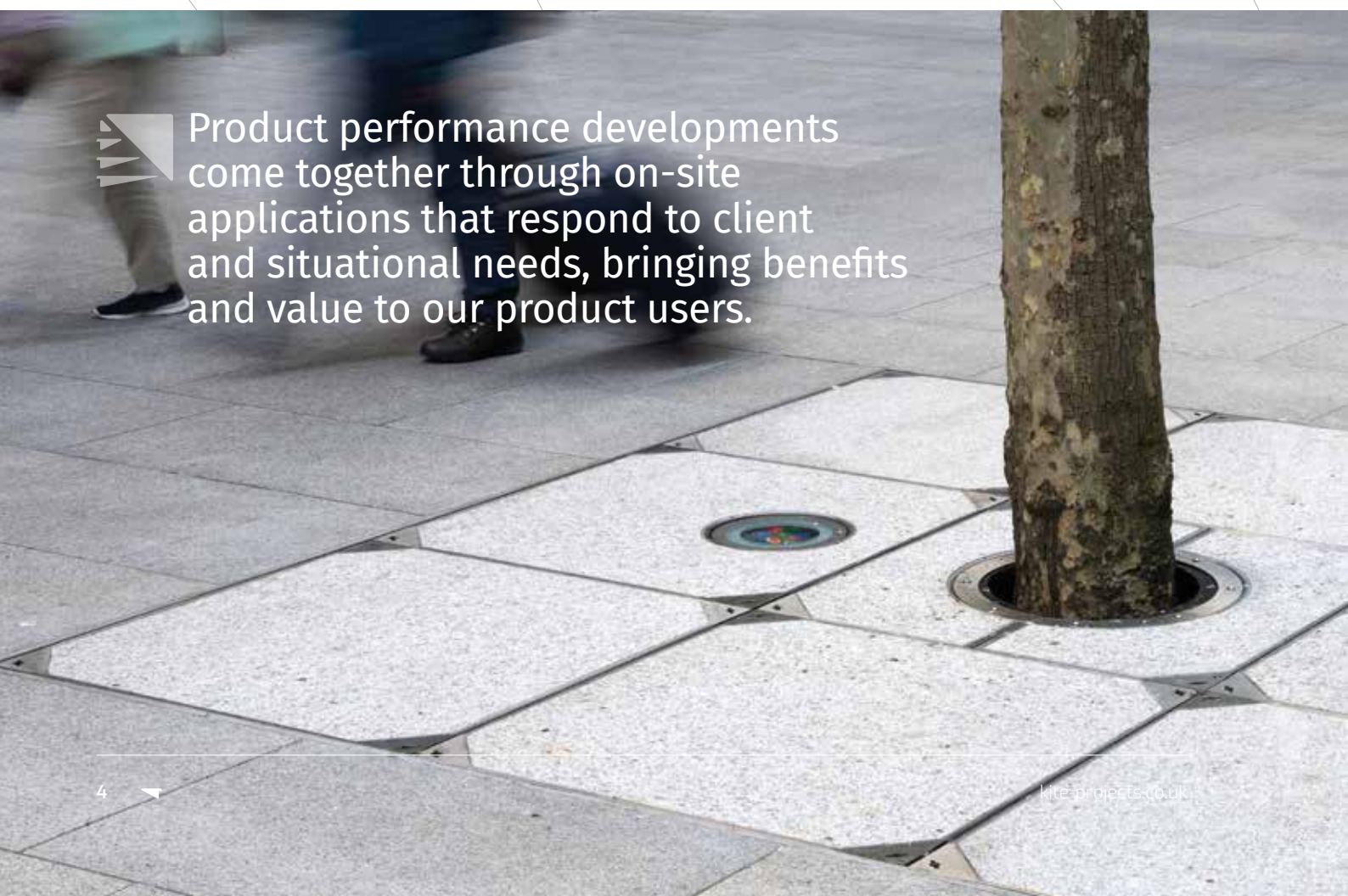
At KITE Projects, we are continually developing our culture of innovation. This is driven by our passion for addressing our clients' challenges. As part of a growing need to work more collaboratively, and in a network of supply, we recognise we can't do everything alone.


The culture of innovation is about our constant quest to perform better and deliver new services and products that address the needs of society, our clients, and their service users.

We do this by capitalising on our strengths and harnessing the capabilities of our supply community. Collaboration acts as the fulcrum to leverage new ideas and ways of working, that help us bring viable solutions to market.

To enable this, our business is oriented around our Collaborative Engineering Process, helping us to create a signature method that is complemented by a client centric working approach.

As a result, product performance developments come together through on-site applications that respond to client and situational needs, bringing benefits and value to our product users.



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By thinking more widely across the areas of product lifecycle, environmental impact, carbon capture – as well as product performance, we deliver solutions that are truly sustainable.



Sustainable Environment

At KITE Projects, we believe in designing and building responsibly. We continue our commitment to developing our expertise and range of services and products, in ways that are sustainable and align with environmental good practice.

Our aspirations are embedded in our Collaborative Engineering Process, where early client involvement and dialogue reinforces our desire to bring sustainability principles to the briefing conversation. This enables us to design our solutions to minimise environment disruption and impact.

Bridging the gap between design intent and design realisation, is central to our way of working. As part of our methodology, we collaborate with our clients and supply community, to build our collective expertise and capabilities to deliver projects, services and





products that have sustainability factors baked in. More and more, we are experiencing demand from our client base, to look beyond traditional building practices and specification of materials.

We are meeting their challenge, by thinking more widely across the areas of product lifecycle, environmental impact, carbon capture – as well as product performance, to deliver solutions that are truly sustainable.

Collaborative Engineering - bridging the gap between design intent and design realisation

We are passionate engineers delivering solutions for engineers and their communities by working in partnership, to deliver project ambitions. Our services create access, connect communities and control environments, to take 'design intent to design realisation,' by working as partners with our clients, to ensure project performance measures are met.

Our approach aligns with the RIBA Plan of Work 2020. We deliver our core tasks with the relevant sector Core Statutory Processes and work alongside our clients to engage with their procurement route choices.

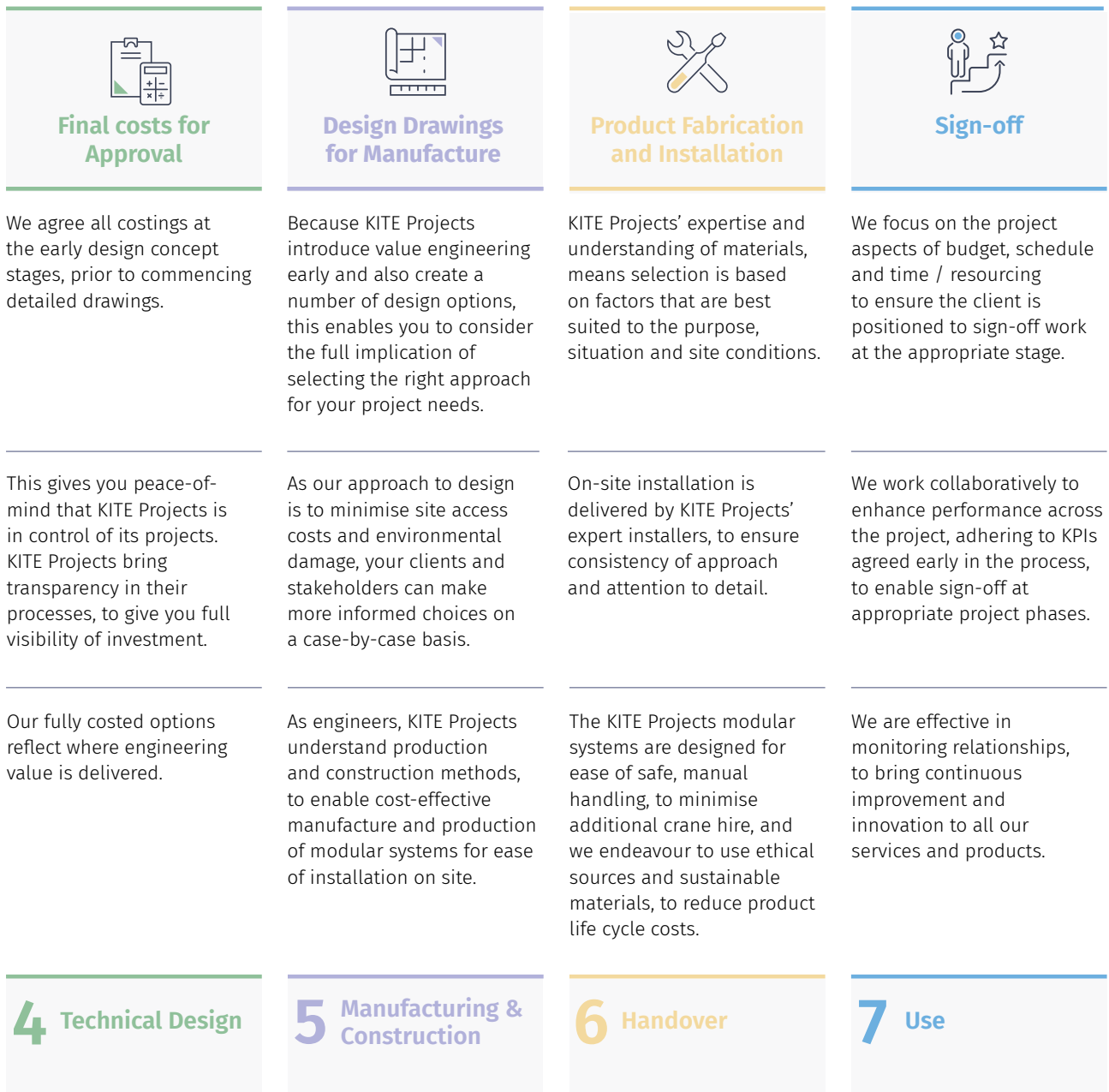
 <p>Early Contractor Involvement</p>	 <p>Evaluate Client Brief / Requirements</p>	 <p>Engineering Design Concept</p>	 <p>Engineering Design Detail</p>
<p>We encourage and facilitate partnering and early engagement to create a positive environment for collaboration.</p>	<p>Early involvement leads to the setting of realistic expectations for design and construction, that align with project aspirations.</p>	<p>We recognise our services are part of the larger project parameters, so work collaboratively with all parties to achieve success.</p>	<p>Our design approach introduces value engineering early, rather than attempting to remove cost later in the process.</p>
<p>We work alongside client advisors, designers and other stakeholders to optimise feasibility options and business cases.</p>	<p>Where possible, we undertake site and access evaluations to ensure requirements can be achieved and delivered effectively.</p>	<p>Our Fixed Design fee and client centric approach encourages innovation through problem-solving, resulting in more cost-effective approaches and optimised results.</p>	<p>Our technical specification reflects environmental and sustainability considerations to reinforce long-term benefits for stakeholders and end-users.</p>
<p>This sets out critical success factors and KPIs early, creating opportunities for optimum design approaches to meet client and budget needs.</p>	<p>The KITE Projects team is aligned to your strategy and objectives, and bring an 'end to end' approach to meet Best Economic Value.</p>	<p>We bring budget transparency and are subject matter experts. We think strategically about your challenges to add long-term value and mitigate risk.</p>	<p>We align our work with the demands of the contract and the supply community and total project environment.</p>
<p>0 Strategic Definition</p>	<p>1 Preparation and Briefing</p>	<p>2 Concept Design</p>	<p>3 Spatial Coordination</p>



RIBA Plan of



I want to thank you and your team for your efforts on this project. As usual with these sorts of schemes, it has been a challenge with the external stakeholders, and a tight programme. The integration and coordination between yours and Atkins' teams have been excellent, and your ability to quickly turn around design updates has been critical to achieving the programme. I'm really pleased with the end solution you and the Atkins team have developed.



Collaborative Engineering - it's what we do

By working collaboratively with our clients – regardless of sector, we ensure our project performance measures are met. From page 37 of this Yearbook, some of our projects are 'In focus', giving an insight into how we bring benefits to our clients through our work.

Letting the traffic flow

KITE Projects can capitalise on its extensive contracts across the Highways sector, to bring functional design solutions that can be tailor-made to local transport conditions and community user requirements.



Highways

Ensuring system resilience in handling long term transport network growth



Airport

Improving Heathrow's resilience to weather and unforeseen events

A sustainable engineering solution for challenging conditions

Critical to the success of Heathrow Terminal 5, is that it keeps moving - This means, KITE Kover must perform consistently time after time, to ensure traveller movement is maintained.



Working collaboratively with our clients,



Rail

Keeping communities safe, whilst building network capacity

Our solutions comply to Network Rail and British Standard design protocols

Our designs incorporate the following:

- ▶ High-grade steel to improve performance and provide certainty of design life, reducing the need for further asset replacement
- ▶ Minimise the need for ground excavation whilst reducing the need for slips and grips
- ▶ Cost effective installation by reducing the need for RRVs or heavy plant



From energy-efficient building materials to on-site renewable energy generation, KITE Projects contribution to engineering minimises environmental impact.

NETWORK RAIL

to ensure project performance measures are met



Water Management

Securing supply and treatment to support a sustainable environment

Product solutions for hard to access locations

KITE Headwall is designed to address the difficulties associated with the remoteness of some drainage locations, coupled with the challenges of using plant to place heavy, pre-cast components.



Their full integration of survey, design, fabrication and delivery provided comfort that the package would be developed and produced in a collaborative manner, addressing the project challenges, to the benefit of both parties.

BAM NUTTALL



Flood and Coast

Mitigating the threat of flooding through proactive planning and resourceful engineering

Protecting the integrity of the built environment - sustainable access

Climate change is making Shoreham more vulnerable to rising sea levels. By working in collaboration, KITE Projects offer design solutions that support environmental sustainability.

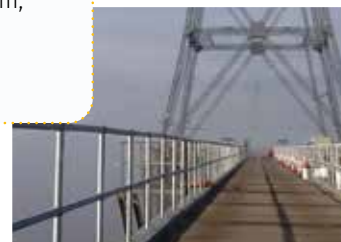


Energy

Supporting the transition to renewable and sustainable energy

Meeting construction industry challenges

Our products are engineered in small components that can be handled manually - essential when access may be a problem, or where skilled engineering resources may not be available.





Highways

Adopting a Systems Thinking approach

More and more, we are experiencing the need for thinking holistically, when addressing the challenges facing our clients. This means considering how their projects interconnect with the world around them.

This requires a shift in mindset, to think in 'circular' rather than 'linear' ways, that consider communities of users, environmental impacts, through to economic growth and wider society. As part of this, KITE Projects has a client-centric approach that encourages innovation through problem-solving, leading to more cost-effective solutions that seek benefits for wider stakeholder groups and the community.

Early engagement with our highways clients creates a collaborative environment, where integrating with their contractor community, enables us to consider how all the component parts of our work fits with the whole project system. For us, this is about synthesis, where understanding the whole and its constituent parts, helps build stronger relationships.

We think of causality when designing our product applications for our clients, as we recognise the ways in which our approach and products influence other factors in the system. We look to bring our experience and expertise gained in other sectors, to bear on highways related projects to encourage connectedness.

This is why we look for positive collaboration with clients, stakeholders, designers, and contractors, to deliver outcomes that break down barriers to engagement.

Guided busway Cambridge

The work delivered by KITE Projects on the Cambridge guided busway, has contributed to improving traffic management within Cambridge's city centre by helping to alleviate congestion, and by enhancing roadway capacity, shortening journey times and improving cyclist and pedestrian safety.

Airport

The user experience as part of the system

To consider the future of air travel, requires a greater understanding and insight as to how airports operate now, and how the user environment can influence our perception of air travel and also enhance our service experience.

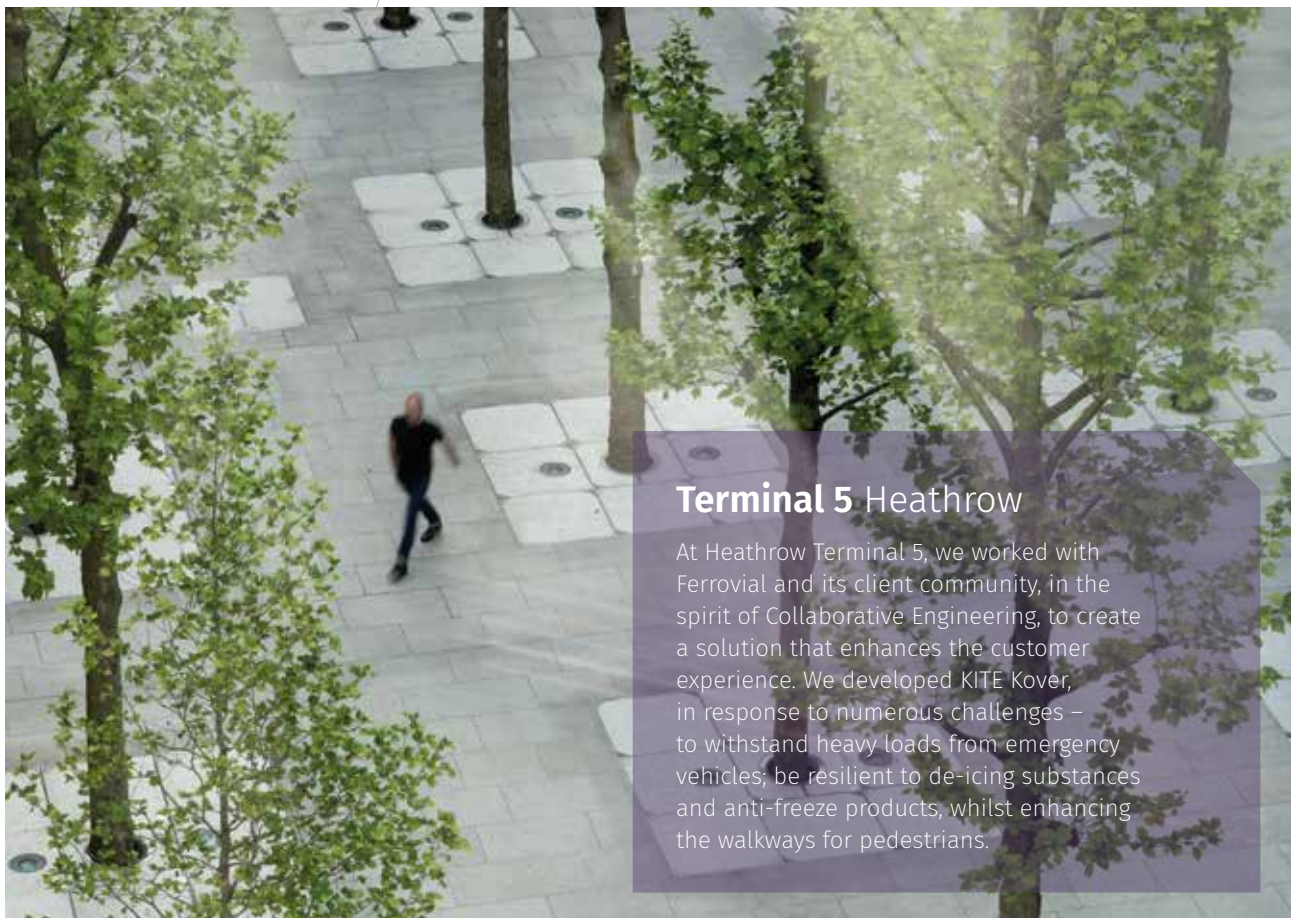
Central to keeping networks moving, is the 'zero queue terminal' aspiration of the future, where the traveller is seeking smooth and predictable transition from their starting point to their airplane, to their final destination. If we consider, that in 2016, 3.6 billion passengers lost 390 billion hours waiting in airport queues, thinking about the whole system is vital.

All things in an airport system are interconnected. By bringing performance metrics together, such as traveller satisfaction, optimised operations and

reductions in waiting times, make the 'zero queue terminal' a feasible reality.

The concept requires that the travel processes be holistically assessed from a customer's perspective, which includes deployment of parallel process and new technologies, as well as everything connected with the built and travel context.

This is a changing dialogue, where the end-users need to be seen as collaborator in the design and construction process, if the 'Airport as a service' is to be realised.



Terminal 5 Heathrow

At Heathrow Terminal 5, we worked with Ferrovial and its client community, in the spirit of Collaborative Engineering, to create a solution that enhances the customer experience. We developed KITE Cover, in response to numerous challenges – to withstand heavy loads from emergency vehicles; be resilient to de-icing substances and anti-freeze products, whilst enhancing the walkways for pedestrians.

Rail

Risk versus resilience

Building the resilience of our rail network, is a recurring theme. As climate change progresses, the UK's railways are feeling the effects of extreme weather events – the impacts of which, are set to continue.

Climate change is a global environmental issue, with real local impacts affecting our transport networks, as well as communities and indeed, society.

Through initiatives to adapt rail assets, we have witnessed localised attempts to minimise environmental impact and mitigate risks for communities. The factors of climate change are leaving our coastal towns and regions exposed to environmental challenges. This is critical when we consider how our aging rail infrastructure serves some of these vulnerable places.

There is an urgent need for an enlightened approach, that balances the needs of rail owners and their assets, with the demands of communities and wider stakeholders. This approach must be collaborative and comprehensive, blending policy making, environmental planning with the needs of communities living in areas exposed to climate change impacts.

KITE Projects has the appetite for setting collective goals with its client and supply communities, to create a whole-system response – one that advocates shared responsibility and ambitions to make a lasting, systemic change.

Princes Risborough Buckinghamshire

KITE Projects has been engaged on numerous projects with its Rail sector clients, where its Collaborative Engineering methodology introduces value engineering early in the design process, rather than trying to reduce cost later. This approach is reinforced by fixed design fees to create budget transparency.





Water Management

Securing supply and treatment to support a sustainable environment

Our clients come to us because we create a collaborative project culture. We combine this with expertise and an understanding of materials and fabrication, that ensures our services and products are fit for purpose, resilient and are optimised for their installation context.

This understanding complements the ways the water industry is thinking about the resilience of its assets. The term 'asset' means different things to different people, depending on sector. How assets are defined impacts what we value, and how investments in infrastructure are made.

With the UK's population predicted to grow an estimated 78 million residents by 2050, there is an urgent need for a consistent and adequate urban water management approach. So, if we consider how we want to design and deliver outcomes that benefit multiple communities, we must consider where we wish to invest our time and resources in assets that will meet the correlating demand.

Network resilience is a continuing thread throughout this Yearbook and applies to the

water management sector. Resilience helps bridge the gap between disaster risk reduction and climate change adaptation, by focusing on enhancing the performance of a system in the face of hazards, rather than preventing those hazards from occurring.

More and more, KITE Projects is engaging with its water supply partners, communities and stakeholders, to develop services and products, that can survive and thrive in the face of stresses related specifically to water – ranging from flooding, storm surges and sea-level rise.

Cheese Bottom South Yorkshire

Projects of this nature require 'collaborative engineering' – as work of this type is expensive and is typically accomplished by multiple organisations and experts working in partnership, bringing together different experiences, knowledge and specialist skills.

Flood and coast

Embracing a system wide step-change approach

According to the Environment Agency's Chief Scientist's Group Report, "to secure a more resilient, healthy, and prosperous future for people and wildlife, a step change is needed for the protection, recovery and restoration of the estuarine, coastal and marine environment, embracing a system wide approach."

The ecosystem is finely balanced when attempting to improve coastal flood resilience, whilst also boosting local regeneration. In the face of increasing coastal flood risk from climate change, exacerbated by frequently aging waterfront assets, communities across the UK's coastline are searching for innovative solutions to safeguard their coastal heritage and livelihoods.

This backdrop presents opportunities and new possibilities. Coastal towns recognise the urgency of the situation, which presents a real business case for the investment to reduce long-term coastal flood risk whilst protecting communities. At KITE Projects, we are seeing an increasing correlation between the need to address the marine and coastal challenges of climate change and coastal erosion, alongside Place-based outcomes that ensure the sustainability of local coast-based communities.

Reviving promenade areas, developing accessible spaces with new architectural planting and amenity terraced seating that contain wave overtopping as flood defences, are now commonplace across our seaside towns in providing locals and tourists with improved amenities.

Cockett Wick Clacton-on-Sea

The Environment Agency took a long-term view of this scheme, recognising the site dynamics, the impacts of climate change, and the safety of residents, required a 'collaborative engineering' approach.

This long-term view was reflected in the specification of materials – opting for stainless steel for resilience and longevity, as opposed to galvanised steel. This brings additional sustainability benefits, including the minimised carbon cost of disposal, as well as the reduced potential for re-fitting due to the use of less resilient materials.





Energy

In the KITE Projects Yearbook 2024, we touched on the possibilities Artificial Intelligence (AI) might bring to the Utilities sector.

Ofgem recognise the use of AI within the energy sector has a lot of potential, but it must be used safely, responsibly, and sustainably. It is working on a framework to make sure that when AI is used energy consumers benefit from it and are protected.

We recognise AI could play a big part in decarbonising the energy sector, for example it can be used to better predict weather that can help improve solar generation forecasts. Using this

technology in this way suggests there should be less reliance on fossil fuels. This means that the use of AI technology can support the UK government's medium and long-term net zero targets.

For KITE Projects, we are excited about the opportunities of collaborating with our partners, to utilise our products to help contribute to this. We can see the possibilities of how our installations can be deployed to increase efficiencies and reduce costs through housing means of capturing data, traffic usage or to anticipate failure or predict maintenance cycles across product lifecycles.

Aust Jetty Bristol

This Jetty gives access to a National Grid pylon. This is unusual because the distance between this pylon and the next across the River Severn, makes it the largest cable span in the UK. This location creates an added dimension, as the salty environment and aggressive weather conditions demand a resilient solution.

The service access to this site, had fallen into disrepair, and KITE Projects was commissioned to create a solution which required that resilience and

sustainability work hand-in-hand. Product and finish specification, alongside minimised installation methods were implemented to achieve longevity. Aust Jetty, is another example where KITE Projects has contributed to a sustainable solution in the energy market to keep the lights on and the network moving – supporting the UK's digital network.

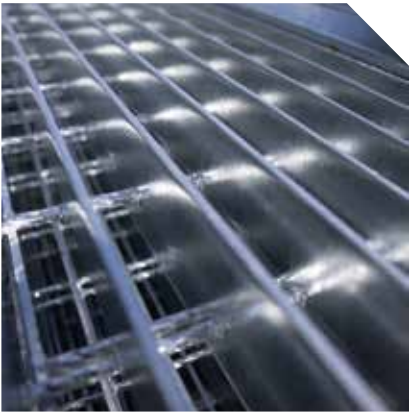


KITE Projects design, engineer and manufacture ACCESS systems.

Challenging applications require a comprehensive approach. KITE Systems bring sustainable Access solutions which are designed to minimise environmental impact, whilst optimising user safety.



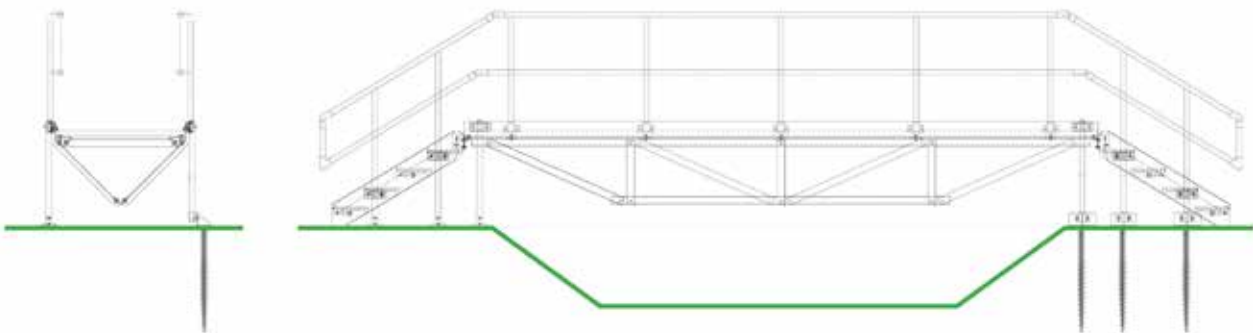
KITE Step is a multi-component access system, where applications are far reaching across a variety of site requirements. The beauty of the KITE Step system, is that it breaks down into small components, making it the ideal choice for installations in hard to reach and remote environments.



Built predominantly from recycled metal, KITE Step is suitable for rail and highway networks.

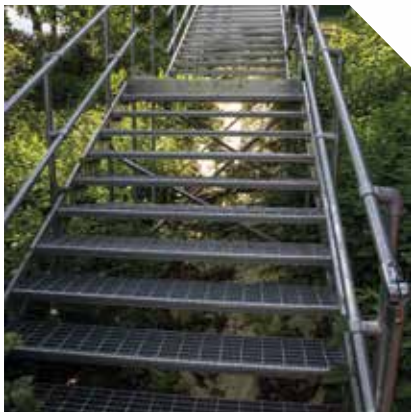
Foundation design could utilise small pocket foundations or screw-piles, so the impact on a slope is minimal for the structural resilience it delivers. Design makes KITE Step re-deployable.

Designed to deliver 5Kn/m in its structure.



“It’s been an absolute pleasure to work together. Good quality products with an excellent after sales support and support more generally.”

Senior Asset Engineer – Network Rail



Available from 1200mm to 1800mm width.



Can be broken down into manually handleable components for ease of installation on site.



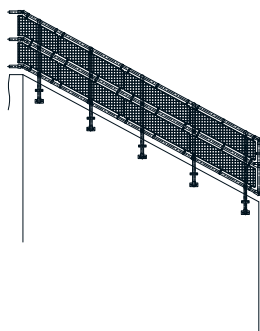
Highly adaptable with other engineered walkway products.



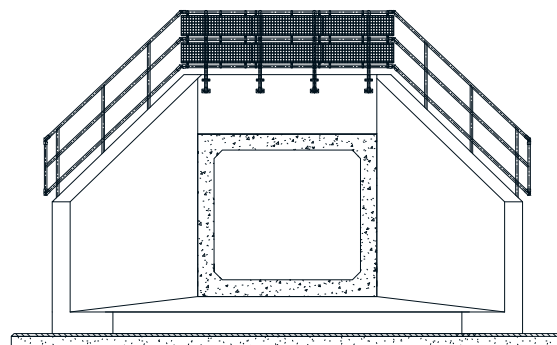
KITE Handrail Clamp system is the ubiquitous choice – essential when installing barriers for either permanent or temporary applications. Designed for fast installation, often with no specialist equipment, the system forms an integral part of the KITE Step system, so the Handrail Clamp can be utilised as part of a larger project installation, or quite simply as a barrier.

With increasing focus on dry construction methods and minimum use of concrete, the KITE Handrail Clamp system offers a sustainable solution. Available in a variety of finishes to meet the client and location requirements, the modular system comes with a large and comprehensive range of components – from handrail tubing, fittings, barriers, as well as clamps.

KITE Projects is renowned for its attention to detail, design capability and focus on regulatory compliance, as well as its passion for safety. This brings quality assurance, so its no surprise that the KITE Handrail Clamp system can be found on major infrastructure projects, through to installations where safety is a pre-requisite to handrail specification and installation.



SECTION A - A



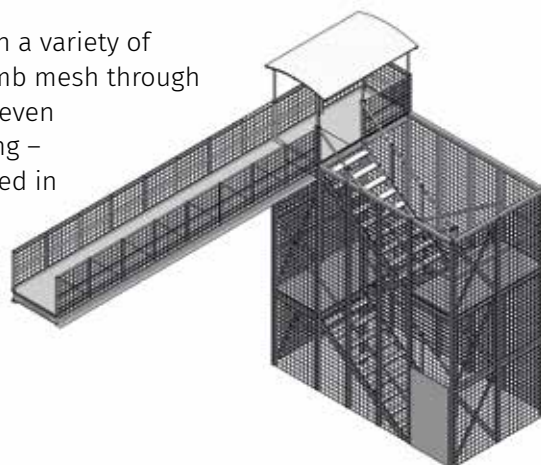
END ELEVATION ON WINGWALLS & HEADWALL



KITE Scala There are numerous cases on the rail network, where there is the need to walk on, or very close to the track. In emergency cases, passengers may need to exit the train and walk trackside for long distances – and even leave the siding from high level before getting feet firmly on the ground safely.

KITE Scala is designed for track worker access where the only alternative is to walk long distances from the nearest station, typically in short engineering hours and is an emergency egress facility – adequate for the evacuation of passengers where to a place of safety. It can be utilised for welfare provision too – the enclosed structure could contain toilet facilities, emergency first aid provisions, off track break-out area for use during engineering hours.

- Modular construction designed for the most efficient construction
- Innovative design utilising the stair as diagonal bracing for the structure
- Free-standing to remove any requirement for fixing to an existing structure
- Designed to be clad with a variety of materials, from anti-climb mesh through to living walls, or could even take advertising hoarding – whatever may be required in an urban environment
- Requires a single slab foundation



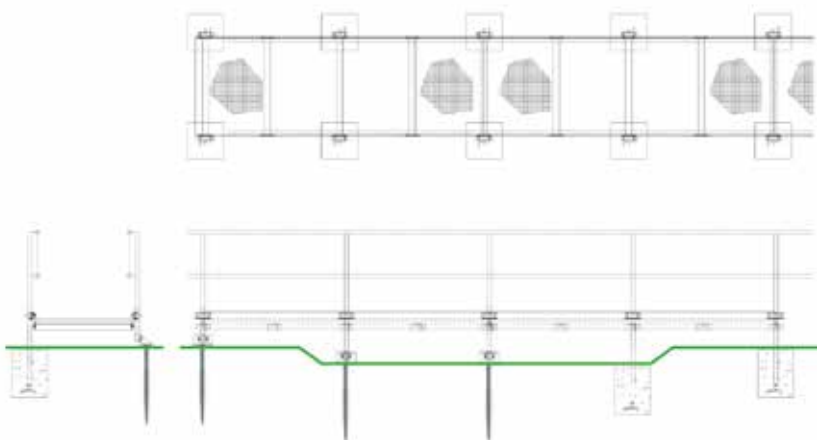


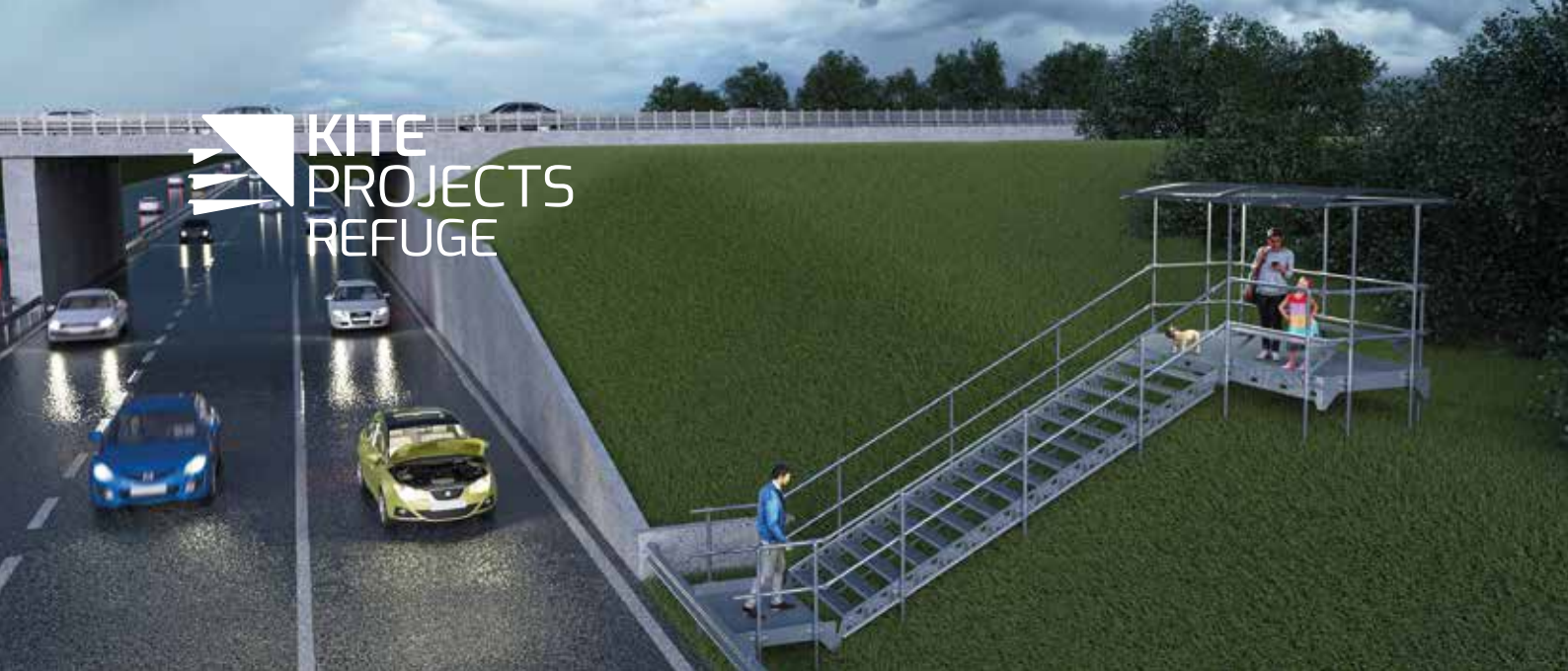
KITE PROJECTS WALKWAY



KITE Walkway is a system designed to enable infrastructure workers to continue their journey safely whilst working on the network. Designed for manual handling efficiencies and minimising the handling of bulk material, whilst providing a secure designated walkway.

The KITE Walkway system integrates with KITE Step and KITE Bridge products. This Access range has been designed with feedback across numerous projects, with the intention of creating safe access routes that minimise manual handling, whilst reducing project timelines. Integral to our design approach is ensuring the KITE Walkway is SSSI compliant. The KITE Walkway is designed for 5.0kn/mz loading and boasts a galvanised finish for a 40-year design life.



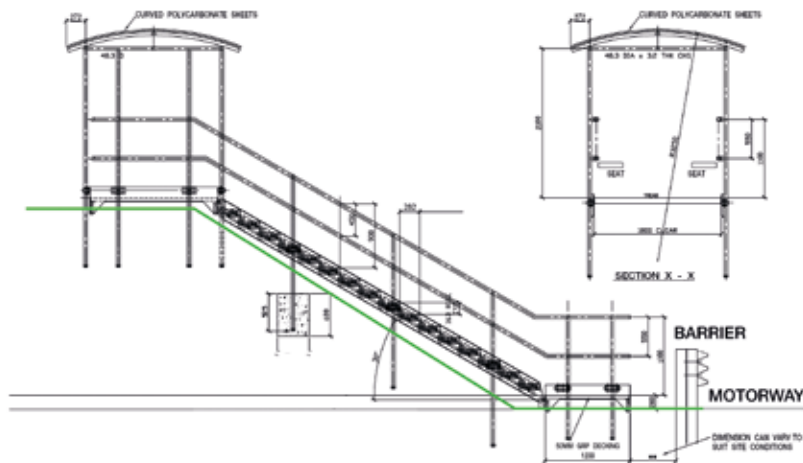


KITE PROJECTS REFUGE

KITE Refuge was designed originally to provide a safe place for people stranded on smart motorways. Drivers and passengers are encouraged to leave their vehicles, so this product offers a flexible system that can be installed roadside.

It also can be applied as a safe place for people to stand when on an embankment, or used as a briefing shelter for night teams who gather under a shelter to be briefed regarding their night's work before deployment. It creates a central point of reference for teams working together to maintain our vital infrastructure.

- Creating safe havens
- Safe access whilst providing muster stations
- Protecting people whilst working in hazardous environments





CONNECT

KITE Projects design, engineer and manufacture CONNECT systems.

Demanding site conditions create exciting design opportunities.

KITE systems enable engineering solutions to connect users, functions or components in ways that can be repurposed over time – helping to maximise return on investment.

 **KITE
PROJECTS**

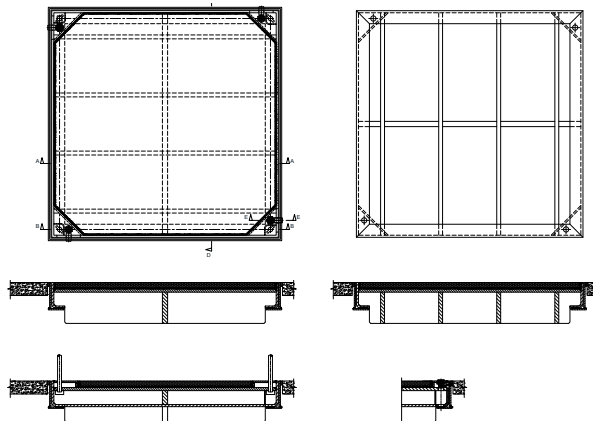


KITE Kover is specifically designed for dual use loading for emergency vehicles together with special consideration for pedestrians, where there are high volumes of user traffic and footfall.

KITE Kover makes an aesthetic contribution to the distinctive look and feel of any public environment, and was designed in this instance to reinforce Heathrow's unique sense of place.

The design reality, is that resilience to de-icing substances is absolutely critical. The covers are built from 316 Stainless Steel with no other metals present, to enhance performance – especially at low-temperatures, where anti-freeze products and salt present a threat to longevity and material integrity.

Whilst protecting pedestrians from trip hazards, these covers are used to give access to a number of vital services that need protection, so each one is sealed using a neoprene gasket. Supporting structures under multi-cover areas, have also been supplied to meet the same performance objectives.

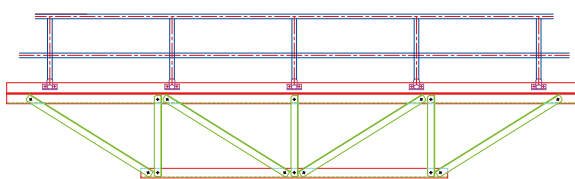
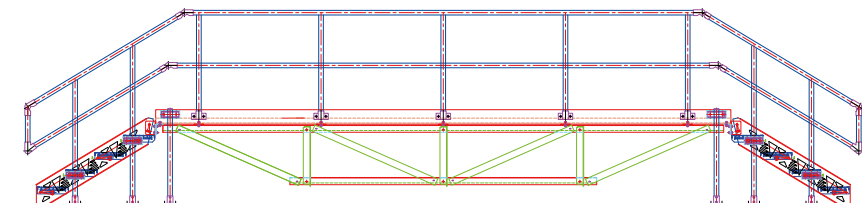




KITE Bridge is based on the same principles and concept as the KITE Step, with the added benefit of utilising step access at each end of the platform. This feature is intended to minimise the potential for the bridge being used for machinery and vehicles when it is built for pedestrian access.

KITE Bridge offers many applications where hard to reach, hazardous, or challenging environments require crossing apparatus that keep people safe.

- Building on a modular system to create opportunities to keep people safe
- Adapting our successful KITE Step system to meet client requirements
- Multiple applications across multiple terrains



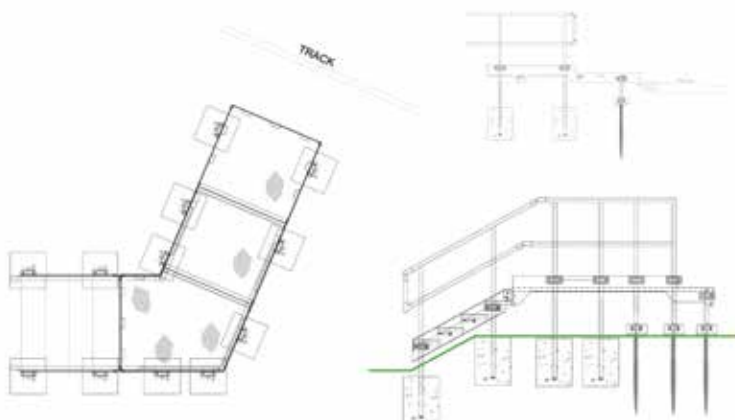


KITE Safe Cross takes KITE Step to a new level – highly adaptable, it provides for members of the public to access the centuries - old rights of way that have been traversed for years. This maximises the protection of people when adjacent to a railway or on railway property.

By highlighting the danger zone, pedestrians can be in the best possible position to make a judgement on whether it is safe to cross the railway when the route takes them that way.

Access also creates connection. KITE Safe Cross enables more people to connect to the countryside or their network without using a vehicle, whilst bringing the benefits of the Step system. It can be utilised for emergency escape routes and daily access and egress requirements too.

- Protecting people, places and communities
- Low impact, easy to install crossing system
- Protecting the integrity of the built environment – whilst keeping people safe

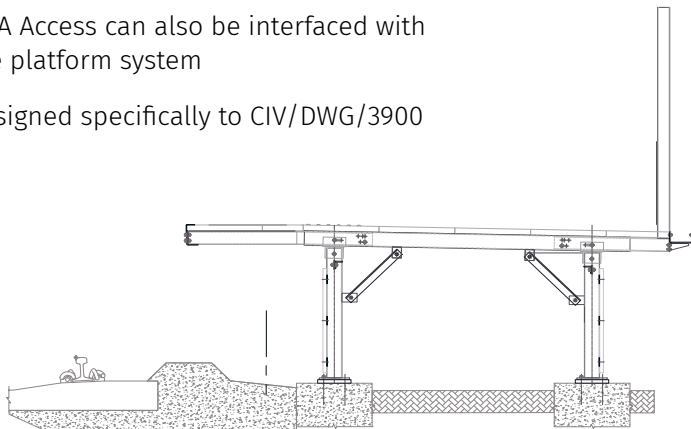




KITE Platform is designed and installed using modular building techniques. KITE Platform is the answer when creating ‘temporary’ access platforms, or building platforms without the time-consuming, labour intensive and expensive traditional methods.

Let’s remember that many of our railway stations have been with us a long time. So, with changing commuter patterns and evolving train design, it’s no surprise there is an emerging need for rail platforms to be made longer to meet passenger transport needs.

- KITE Platform design includes platform end gates, rear of platform fencing which considers for crowd loading and end of platform steps.
- Design can also include Secondary Means of Escape using proprietary KITE system.
- Utilises galvanised steel for structural trestles to maximise design life – at least 50 years for the structure.
- DDA Access can also be interfaced with the platform system
- Designed specifically to CIV/DWG/3900







CONTROL

KITE Projects design, engineer and manufacture CONTROL systems.

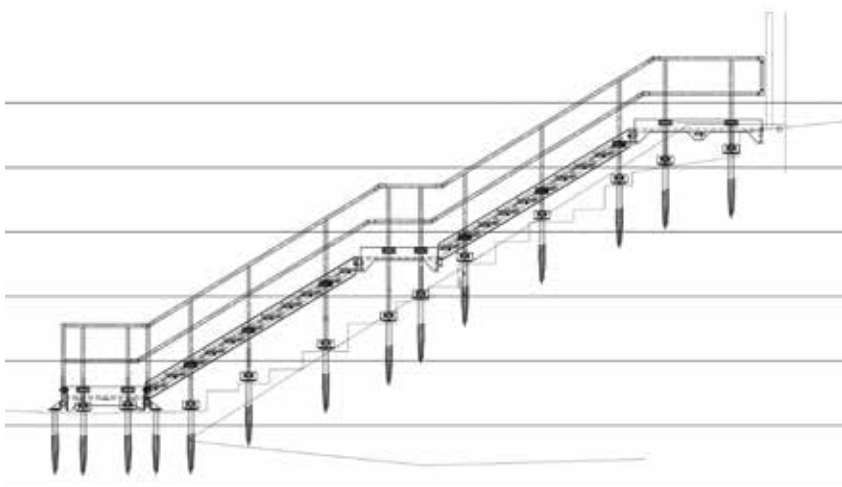
We welcome a sustainable approach to engineering products. KITE Systems can be utilised in demanding locations, where there are accessibility issues, or where alternative techniques are required, or where traditional methods are hard to construct.



KITE Base is a concrete free foundation – using a combination of ground engaging screws with intelligent metal structures and connections to create a foundation that doesn't require concrete.

KITE Base can have a positive carbon impact, and once fitted into the ground is ready for additional structural mounting immediately – delivering more in engineering hours with full backing of structural engineering and a 40 year plus design life too.

- Minimising the use of concrete for sustainability
- Application that is flexible and can be re-used and repurposed
- Driving innovation to create sustainable environments





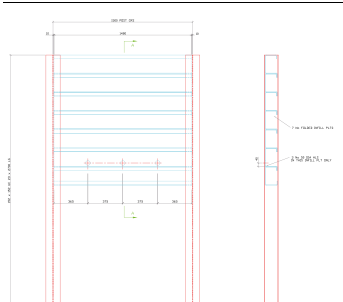
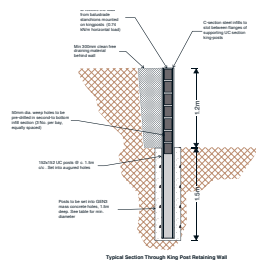
KITE Retain is designed to maximise the traditional King Post concept. This product is designed to maximise the effectiveness of retaining structures by utilising horizontal members that are formed to interlock with one another, which will minimise the bleed through of retained material.

The sections are open at the back, which will enable retained material to blend into the steel profiles acting as a restraint to the members being lifted out. The profile will minimise the possibility of water being held within the sections too.

The use of metal means that the engineering resilience is very high giving at least 40 year life span increasing to 120 years by using thicker materials. The sections are designed to be well within a two man lift, but the metallic nature of the infill lends itself to being lifted by magnetic lifting devices which will minimise lifting risks.

Each site will have engineering details checked, and components supplied will recognise that different heights and soil conditions will require evaluating before confirming the appropriate sizes.

- Creating sustainable solutions in response to environmental challenges
- Resilient and low impact application
- Protecting the integrity of the built environment – for generations to come

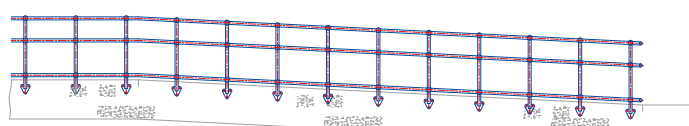
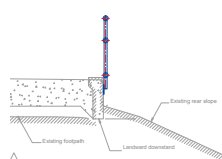




KITE Seawall reminds us that seaside walks are part of the holiday experience. Penny arcades, fairground rides and fish and chips all create a sense of seaside nostalgia. Coastal based local authorities have a constant battle with trying to keep the natural elements at bay, whilst enhancing the attractiveness of their seaside resort.

Promenades and walkways are part of that attraction, so ensuring handrails are safe and well-maintained is a key priority. That's where KITE Sea Wall Handrail can help. It can be designed to satisfy the architectural heritage of a place, or it can be designed to accommodate contemporary aesthetics.

- Any number of variable factors can be adapted to create the right combination of engineering to give reassurance to all stakeholders
- Loadings and aesthetics are combined to give the heritage feel, that are part of the nostalgia of a place
- Architectural infill can be added protection for children and pets
- Spectator presence and high usage is accommodated at the design stage
- Handrail engineered for coastal and crowd resilience
- Engineered in mild steel and Stainless Steel
- Marine resilient coatings with long design life
- Access for the less able and ramp angled products can be manufactured





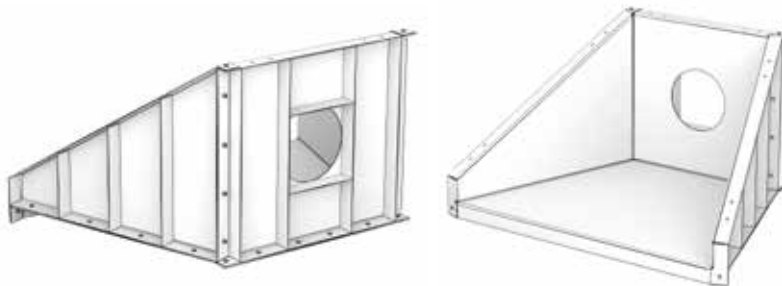
KITE Headwall is designed to consider for the difficulties associated with the remoteness of some drainage locations, coupled with the difficulties of using plant to place heavy pre-cast components.

KITE Headwall can be engineered in small components, so that they can be handled manually with the overriding intention to deliver as much as possible within a single shift, especially where skilled engineering resources may not be available.

There is no need for cement, as once this item has been placed and anchored, handrails can be mounted immediately and the whole thing completed in a single visit!

Built from recycled metal, design life is over 40 years and the product still re-deployable or recyclable at any point.

- Creating sustainable solutions in response to environmental challenges
- Resilient and low impact application
- Protecting the integrity of the built environment – for generations to come

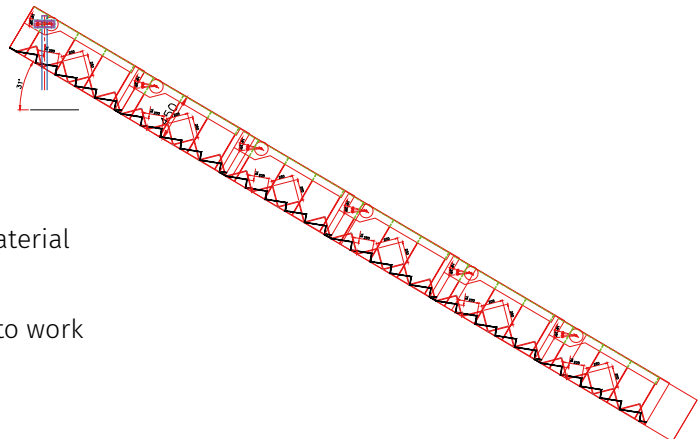




KITE Cascade is designed to provide an engineered cascade solution, where water has to be taken from a high level and deposited into an adjacent drainage system.

With the recent changes in weather patterns and the impacts of global warming being felt close to home more and more, we're being asked to provide solutions to combat flooding or re-direct waterflows. We're often at the mercy of fast flowing and quickly changing rivers and waterways, so providing a diversion or flow system at short notice is vital in protecting property and assets.

- Designed to provide an engineered cascade solution where water has to be taken from a high level and deposited into an adjacent drainage system
- Can be engineered for a multitude of flow rates and volumes
- Anchored to an embankment with a minimum of foundations – utilising the proven KITE Step anchorage system
- Designed to be manoeuvred with minimal handling equipment
- Modular system manufactured off-site to enable maximum utilisation of engineering hours
- Reduces the handling requirements of rock-based energy dispersal systems
- Environmentally favourable – reduced material movements and use of natural resources
- Minimal excavation required – designed to work with existing topography





Sectors **In focus**

Focus on Cambridge Busway



Design intent A bespoke solution to separate and segregate the access track from the busway.

Design Building a resilient, safe solution incorporating a suitable height of modular fencing with access points to allow for emergency services.

Design reality Protecting the road-user community for decades to come.

More and more, clients are asking KITE Projects to deliver solutions, that not only go beyond safety compliance, but meet sustainability criteria too.

KITE Projects meet these challenges by working collaboratively with all stakeholders, as we recognise that infrastructure projects must be responsible to the communities they serve. The Cambridge busway project had this focus, where it is integral the scheme supports connecting communities – be that for work, leisure or play.

Measures of success included:

- Facilitate access to the wider environment to help enable healthy lifestyles
- The solution must improve pedestrian safety and protect people from harm
- Meet legal obligations regarding health and safety
- Provide a long-lasting solution with long design life
- Contribute to Cambridge's sustainability and net zero ambitions

The solution included:

- Extensive surveys to ensure scope viability and solution functionality
- Presenting different design options within a fixed design cost framework
- Bespoke height design to suit location circumstances and other bespoke features to enable mammal access and egress
- Purpose made installation jig, to improve efficiency for installation by hand
- Galvanised finish on fence, with yellow powder coating as an enhanced safety features on 180degree foldback gates
- Compliant specification to meet BS7818 standard





Focus on Princes Risborough



Design intent	An optimised design solution that combines accessibility and sustainable material specification.
Design	A modular, off-site solution to ensure fast and effective installation within a limited time window.
Design reality	Unlock access to a difficult site, to ensure safety for both rail users, pedestrians, and site operatives.



The complexity of the UK’s rail network and its construction, means that no two jobs are the same for KITE Projects. The features of local terrain and landscape, means that each project and the solutions we deliver are bespoke.

The main project at Princes Risborough was part of the wider HS2 programme, where existing infrastructure needed to be adapted to fit in with the overall scheme. Here, the track needed replacement, including the sleepers – a stretch exceeding half a mile, and to add to the complexity, a crossing was also required. This warranted a 52-hour rail possession – only one of which was available in a single year.



The key challenge facing KITE Projects, was one of safety, where the existing access was poorly constructed, degraded and dangerous – with inadequate landings that were too close to track. The standing position on these landings, gave pedestrians poor sighting of track and poor visibility of waiting pedestrians to the train driver.

Another site-specific feature was that the public right of way was an unusual situation, where the embankment was very steep and there was an inadequate ballast shoulder, that made it unviable to build using conventional concrete-based installation and masonry products.

KITE Projects was introduced to the project, and worked collaboratively with all involved, to deliver an alternative and more streamlined solution. The modular KITE Step product unlocked the access challenge, where the suspended platforms gave appropriate height and containment to give people a safe access across the track and work within the site constraints.

KITE Project’s design input completed the design process, and our proposal enabled completion of the design documents required for the track replacement.

A long-term design life of 40 years was attained, which created enhanced access that connected a new housing estate to the central Princes Risborough facilities, including a beautiful recreation ground, and the local shops and facilities.



Focus on Wales and Western



Design intent Supporting Network Rail’s ambitious vision to transform the railway in Wales and Borders.

Design Keeping communities safe, whilst building network capacity.

Design reality Our solutions comply to Network Rail and British Standard design protocol.



In alignment with its thirty-year Environmental Sustainability Strategy to bring more sustainable use of materials, KITE Projects is supporting Network Rail in building a service more resilient to climate change. Our Access solutions contribute to building a sustainable railway, which means we help maintain the assets across all the estate – regardless of location.

Across the Wales and Western footprint, the challenge facing KITE Projects is to work alongside Network Rail to develop more sustainably focused pedestrian crossings and step access across a broad and varied geographical spread, where terrain and access for construction services is often difficult.

The KITE Projects approach helps to bring together these two contrasting points, by developing a suit of services and products, that are manufactured with a focus on sustainable methods of manufacture, combined with ease of installation due to modular construction techniques.

Track upgrades and maintenance bring these aspects together. The glue that binds them together is rail worker safety, and KITE Projects supports the North Wales commitment to install more step access to meet Network Rail Standards across its asset portfolio, to ensure people stay safe.

We believe in behavioural safety and recognise that rail staff will act in a safer manner whilst on and beside track, if their worksite access is properly provided for. KITE Projects has developed a variety of adaptable track side access applications to support this, whilst bringing design integrity and assurance to ensure compliance standards are met.



Focus on Heathrow



Design intent Work in harmony with Heathrow’s traveller and user environment.

Design Improving Heathrow’s resilience to weather and unforeseen events.

Design reality Protecting the integrity of the built environment – sustainable access.

Collaborative engineering has the user problem at its heart. Even though we find ourselves working directly with contractors or the project client, the user experience is in our minds at the outset. Heathrow Terminal 5 was the genesis of the KITE Kover, where there was a site-specific challenge that we were involved in addressing.

Critical to the success of Heathrow Terminal 5 is that it keeps moving – and it’s not just air passengers. The terminal is an infrastructure network, serving travellers and everyone who works in air travel, fulfilling thousands of flights per year out of T5. This means KITE Kover must perform consistently time after time, to ensure traveller movement is maintained.

KITE Kover is specifically designed for dual use loading for emergency vehicles together with special consideration for pedestrians, where there are high volumes of user traffic and footfall. It has made aesthetic contribution to the distinctive look and feel of the T5 environment, and was designed in this instance to reinforce Heathrow’s unique sense of place.

Whilst protecting pedestrians from trip hazards, these covers are used to give access to a number of vital services that need protection, so each one is sealed using a neoprene gasket. Supporting structures under multi-cover areas have also been supplied, to meet the same performance objectives.

The design reality is that resilience to de-icing substances is critical. The covers are built from 316 Stainless Steel with no other metals present, to enhance performance – especially at low-temperatures, where anti-freeze products and salt present a threat to longevity and material integrity.

The success of this KITE Kover application at Terminal 5, has led Heathrow to implement further applications at Terminal 3 – extending its use to Fire Hydrant and Dry Riser covers. Much of the engineering solution of KITE Kover is under the surface, so it lends itself to housing and accommodating mechanical and electrical services underground, as well as creating a caged facility for tree roots. The consideration of KITE Kover for further applications at Heathrow, is the result of collaborative engineering and partnership working.





Focus on Cheese Bottom



Design intent	Create a modular construction to provide ease of installation in a remote area.
Design	Improving site accessibility in hard-to-reach terrain.
Design reality	Align with water quality improvement initiatives and providing a diversion 'fish pass' causeway access for marine life.



Yorkshire Water is investing £4.2m in its Cheese Bottom wastewater treatment works in Thurgoland, Barnsley, to improve water quality in the river Don. What makes this site of interest, is that it includes the construction of a fish pass, created to help fish 'climb' past locks and weirs.

The project will both improve the water quality of over 7.4km of the watercourse downstream of the works and address the migration of fish to their spawning grounds further upstream. The adjacent weir, originally constructed to service the nearby mill, has created a man-made obstruction preventing fish returning to their traditional habitats for breeding.

This dual approach to making cleaner water, together with the construction of this fish pass on a migration route, is addressing the local fall in freshwater fish numbers, creating more suitable conditions for fish populations to thrive. It is only relatively recently that the extent to which coarse (freshwater) fish need to move upstream and downstream has been recognised, and many fish passes are now designed to take them into account.

Projects of this nature require 'collaborative engineering' – as work of this type is expensive and is typically accomplished by multiple organisations and experts working in partnership, bringing together different experiences, knowledge and specialist skills.

The KITE Projects role in this £4.2m scheme, was to:

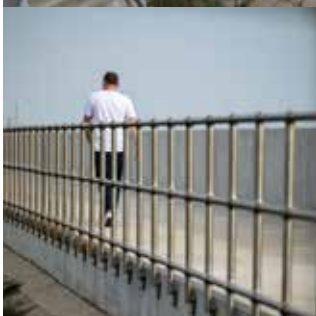
- ▶ Contribute to providing an adaptive approach to meeting challenges from water pollution
- ▶ Create safe access for site operatives to observe and maintain the fish pass and causeway
- ▶ Support Yorkshire Water's commitment to the Water Industry National Environment Programme (WINEP)
- ▶ Following site surveys and design input, liaise with construction consultants to engineer and install a sustainable and resilient environmentally compliant solution



Focus on Cockett Wick



Design intent	A sustainable engineering approach creating a safe environment to enhance resident wellbeing.
Design	Building a resilient solution whilst reducing carbon costs.
Design reality	Protecting the coastal community for decades to come.



Investment in sea defences, serves the dual purpose of keeping coastal erosion at bay whilst keeping people safe from harm. Equally, increased participation with our natural surroundings requires a future oriented approach that can only be delivered in a collaborative way.

The project at Cockett Wick, presented the opportunity to work alongside the Environment Agency, asset owners, contractors and residents, to deliver a solution that goes beyond compliance.

In the face of unforgiving tidal flooding, a prerequisite for the scheme was to maximise the space available for public recreation, whilst protecting more than 3,000 homes and businesses along the coastline.

The KITE Projects role in this £12m scheme, was to:

- Contribute to providing an adaptive approach to meeting challenges from climate change
- Maintain the sea views from the promenade
- Consider the 50-year proposed design life, by utilising stainless steel (as opposed to galvanised steel) complying with BS 7818 Class 3 specification
- Develop 3D modelling from its site survey, to prove the viability of its solution
- Comply with the decarbonisation strategy, which was at the heart of decision-making, and was reached through working collaboratively with all parties

KITE Projects is proud to have collaborated in small part on in this scheme, that included:

- The use 152 recycled steel tube piles rather than new steel sheet piles, saving approximately 1,000 tonnes of carbon
- Carbon savings by transporting the revetment rock in 6 barge movements instead of 700 flatbed lorry loads, saving 48 tonnes of carbon
- Redistributing 1,200 tonnes of surplus rock to support several local collaboration projects with landowners to protect seawalls from erosion



Focus on Aust Jetty



Design intent	A sustainable installation delivered to withstand adverse weather conditions, whilst addressing safety compliance for operatives working at height.
Design	Going beyond compliance to ensure low-maintenance and resilient solution.
Design reality	Ease of installation by using modular construction principles to address hard to access terrain.



This Jetty gives access to a National Grid pylon. This is unusual because the distance between this pylon and the next across the River Severn, makes it the largest cable span in the UK. This location creates an added dimension, as the salty environment and aggressive weather conditions demand a resilient solution.

The service access to this site, had fallen into disrepair, and KITE Projects was commissioned to create a solution which required that resilience and sustainability work hand-in-hand. Product and finish specification, alongside installation methods were implemented to achieve longevity.

The KITE Projects solution involved collaborative engineering - where we had to liaise with the main contractor and client to establish the specification for coatings and loadings to satisfy the requirements of National Grid.

The key objectives were:

- ▶ To make the world a safer place for the maintenance staff accessing the pylon for inspection and maintenance purposes, in an environment open to the elements
- ▶ To create the level of resilience required, the tubular posts and the rails had to be galvanised and have appropriate thickness to give the load capacity required
- ▶ As added complexity, to collect enough galvanising to exceed 100mic thickness; S355 grade tube was required, with shotblasting to SA2.5 prior to galvanising
- ▶ Fixing methods were also considered in the context of corrosion and loading requirements
- ▶ The whole package was supplied with certification for the processes required to give certainty to the client

Aust Jetty, is another example where KITE Projects has contributed to a sustainable solution in the energy market to keep the lights on and the network moving – supporting the UK's digital network.



KITE Projects provided us a one-stop solution for the design and supply package of a technical handrail, manufactured in stainless steel, to a high quality, specification and loading requirement.

Their full integration of survey, design, fabrication and delivery provided comfort that the package would be developed and produced in a collaborative manner, addressing the project challenges, to the benefit of both parties.

The KITE team were all extremely knowledgeable about their products and applications, eager to explore alternative possibilities, and all provided a high level of understanding and commitment in their field. Their approach, 'Keeping your Network Moving' commitment and expertise, all aligned with our own values as a Tier 1 contractor.

KITE had a pro-active approach to the works, a 'fixed fee' approach to design, both of which added value to the process and assured us that KITE Projects produced a product which is fully compliant with current safety regulations and Standards.

The scheme we delivered directly benefited the local area and community and, with KITE's involvement in providing guardrail within the public domain, the visual appearance of the area was further enhanced for future generations.

Robert Harvey

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Cockett Wick Seawall Improvement Scheme



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