PlanningPortal

Powered By TerraQuest

TerraQuest | Insights

# **A new era for UK Civil Engineers?** Britain's evolving infrastructure needs.

# The world is changing, and the UK's approach to infrastructure is changing with it.

The Civil Engineering sector is innovating - reshaping the built environment to reflect modern priorities and delivering world-leading examples of future-proofed innovation.

**Yet delivery is being constrained by several factors**. Finance and resource pressures are significant, with grid delays and land scarcity also presenting notable roadblocks in recent years.

This white paper examines the current state for UK infrastructure; what government has pledged, what industry is reporting, and **the outlook for civil engineers working across the sector in 2026 and beyond**.

# Adapting at scale - **meeting current and future demand**

By mid-2032, the UK's population is projected to rise to over 72 million, increasing pressure on housing, transport, utilities and social infrastructure. Rail is already seeing over 1.7 billion passenger journeys, with longer-term analysis indicating this figure is likely to grow substantially.

When it comes to water, it's estimated England could face a 5 billion litre per day shortfall by 2055 without new reservoirs, transfer schemes and efficiency measures. Furthermore, around 6.3 million properties in England are currently at risk of flooding, a figure expected to rise with climate change; meaning we need significant new flood-proofing infrastructure.

UK electricity demand is expected to rise materially through the 2030s as our economy electrifies - putting annual demand at between 500–600 TWh by 2035.

What's more, we are expecting to see a significant rise in both data centres and battery storage facilities – two newer forms of particularly energy-intensive infrastructure. With all this, demand on the grid is expected to double by 2035.

## Net Zero

Net zero substantially adds to infrastructure demands.

In June 2019, the Climate Change Act 2008 was amended to make net zero greenhouse gas emissions by 2050 legally binding, supported by interim carbon budgets – we are currently at a 78% emissions reduction by 2035 target under the sixth carbon budget. The UK is also committed under the Paris Agreement limiting global warming to well below 2°C.

These pledges have specific implications for infrastructure, including a fully decarbonised electricity system by 2035. This will require new clean energy infrastructure as well as the significant expansion and reinforcement of transmission and distribution networks.

As current legislation stands, there will be a ban on the sale of new petrol and diesel vehicles by 2035. It is estimated that at least 300,000 additional charge points will be needed by 2030 alone to meet this target – we currently have around 60,000 across the country.

The scale of the required national upgrade is significant, and while civil engineers are well aware of established bottlenecks, there is growing momentum to address these challenges and accelerate the roll-out of vital schemes.

# Tackling the roadblocks

## 1 Planning

Securing approval for Nationally Significant Infrastructure Projects (NSIPs) - the most common consent route for large infrastructure projects in England - is rarely straightforward. Schemes can take several years to move from pre-application through examination to consent, with approval timelines lengthening over the last decade.

In 2024, the Planning Inspectorate introduced a 'fast-track' examination route for NSIPs, intended to accelerate decision-making for projects that meet quality and readiness criteria. Yet early reporting indicated that no projects had formally entered the fast-track process in its first year of operation, suggesting that its practical impact has yet to be fully realised or tested in practice.

### Accelerating consent

The government has made further strides to streamline the approvals process for infrastructure recently, with the aim of helping projects get consented more quickly.

This wave of recent reforms, such as those enacted via the Planning and Infrastructure Act in late 2025, seek to streamline planning by reducing statutory pre-application consultation requirements for infrastructure projects. This is expected to lead to greater decision efficiency, helping to keep national infrastructure moving forward at pace.

**Peter King | Land Referencing Consultant -** TerraQuest

> "Recent legislative changes are helping streamline the consenting process, which is promising. To make the most of these updates, applicants will need to ensure submissions are thorough and well-prepared, to set projects up for a smooth journey and reduce the risk of delay or challenge."

# 2 Investment, maintenance and ageing assets

Uneven and uncertain investment is increasingly cited as a barrier to infrastructure progress.

While much of the UK's infrastructure is publicly owned, delivery often relies on blending public and private capital. Specific bodies exist to help attract private finance into the sector - namely the National Wealth Fund, but also Great British Energy which supports the clean energy transition.

Attracting money into the sector depends on confidence in a clear and credible pipeline. In this context, a July 2025 report from the Public Accounts Committee (PAC) raised substantial concerns about the UK's pipeline transparency in recent years, claiming lack of clarity may have limited investment.

But it's not only about securing initial backing, it's also **ensuring funding is sufficient** to see projects through to completion, which can be challenging where scope evolves over time.

## Maintenance

Then there's the maintenance. Much of the UK's existing infrastructure requires major upgrades. Water and sewerage alone may require around £290 billion over the next 25 years to meet environmental and service targets, whilst fixing roads across England and Wales would cost an estimated £16.8 billion.

What's more, there are concerns over the condition of a large number of infrastructure assets due to return to public ownership in the coming years.

> "Unfortunately, some projects that have approval and consents don't have the full investment required to build at this stage. This is partly due to the needs of the project changing in the five years from inception to construction - it's a difficult balance to strike, as unforeseen delays can cause knock-on effects for delivery"

**Peter King | Land Referencing Consultant -** TerraQuest

## Financial support

To support growth across the sector, the Government recently released their 10 Year Infrastructure Strategy, which commits £725 billion to UK infrastructure over the next decade - a level of investment with the potential to be transformative for assets of all kinds.

Central this is the creation of the National Infrastructure and Service Transformation Authority (NISTA), designed to strengthen oversight, better prioritise projects and embed private finance more effectively across the pipeline.

In July 2025, NISTA launched an Infrastructure Pipeline Digital Portal, providing real-time information on publicly funded infrastructure projects, ensuring greater transparency and certainty for investors.

3

# Skills shortages

On top of this, workforce pressures are mounting. In 2024 it was forecast that 251,500 additional construction workers would be needed by 2028 to meet demand, but it seems uneven opportunities across the sector could be exacerbating this issue. A report in Autumn of 2025 showed that the workload of civil engineers across the UK had dropped to its weakest level since covid, with only 7% of firms reporting workload growth in Q2 of 2025

## Capacity support

There has been sustained funding committed in recent years to strengthen capacity across the construction sector and address workforce shortages. In 2025, a £600 million construction skills package was announced to support the training of up to 60,000 additional skilled workers - investing in new technical colleges, expanding construction courses, and incentivising employers to take on apprentices.

In 2026, the government committed further substantial investment across priority sectors, including construction, through an expanded £725 million Growth and Skills Levy programme. Designed to create and fast-track 50,000 new apprenticeships, the initiative aims to open secure, well-paid career pathways while equipping employers with the talent needed to deliver at scale. Together, these measures have significant potential to strengthen the infrastructure workforce and support long-term project delivery.

# 4 Grid connection delays

The UK's energy infrastructure must be connected to the national grid so that it can provide power, but there have long been delays in securing connection. Projects can stall for any number of reasons – with land ownership and restrictions playing no small part – and stalled projects hold up grid connection queues.

The backlog of grid-waiting projects was re-ordered in 2025 under the government's Connections Reform Programme to prioritise schemes that demonstrated readiness to progress. However, in February 2026 The National Energy System Operator notified Ofgem that 210 of the 340 projects originally granted 'protected' status– ensuring they would receive grid connection by 2027 - would now not likely meet this deadline. This underlines how vulnerable the entire pipeline is to project delays.

## Stronger connections

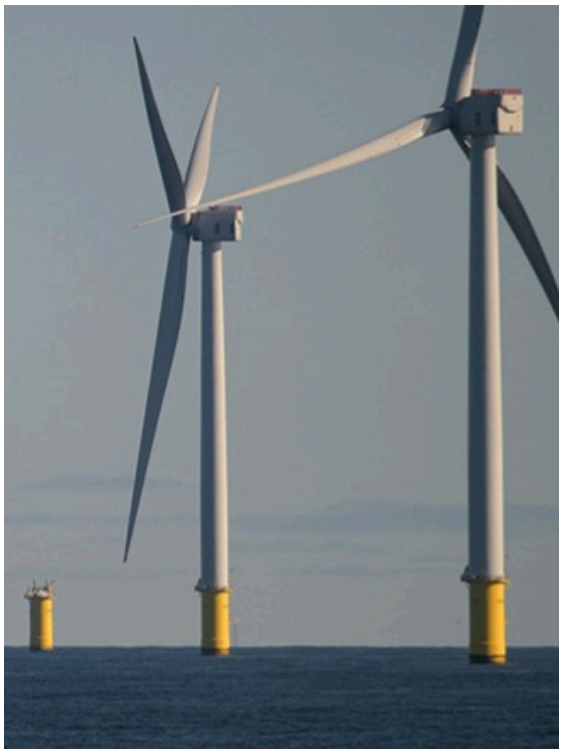
Despite delays, the UK's Grid innovation is accelerating. National Grid's Great Grid Upgrade is underway, which comprises major reinforcement and expansion projects to expand capacity, connect new renewable energy sources strengthen links between regions, future-proofing the grid for rising demand and net-zero and at the same time helping ease connection bottlenecks.

> "We're incredibly proud to be working alongside National Grid to support key aspects of the Great Grid Upgrade – the largest improvement of the UK's electricity network in generations. Our work helps inform routing decisions, supports legal compliance and underpins key negotiations with landowners."

**Peter King | Land Referencing Consultant -** TerraQuest

# UK innovation: Projects to be proud of

Despite considerable pressures, the UK has delivered several world-leading schemes in recent years, not just innovating, but setting international benchmarks for excellence.



## Energy

The UK is firmly at the forefront of offshore wind. **Hornsea 2**, completed in 2022, was the world's largest offshore wind farm at the time, while Dogger Bank Wind Farm - now under phased delivery - is set to take that title at an even greater scale when completed in 2026.

Hinkley Point C, meanwhile, is the first new nuclear power station to be built in the UK in more than 30 years and is expected to begin generating electricity later this decade, with a capacity of around 3.2 GW of low-carbon power.

## Offsite construction

Modern methods of construction (MMC) and digital delivery are embedded across the UK.

Unlocking housing in highly connected locations is key to meeting demand in our towns and cities. By leveraging existing transport infrastructure, offsite construction enables efficient delivery on tight, complex sites where traditional methods can struggle.

Ten Degrees Croydon was recognised as the world's tallest modular building when it was completed in 2021, a record that was later surpassed by College Road Tower in 2023, also in Croydon.


## Transport

High Speed Two (HS2) Ltd has deployed integrated digital modelling and programme-wide BIM to strengthen sequencing, cost control and risk management - setting a benchmark for digital engineering at megaproject scale.

The Elizabeth line, meanwhile, completed in 2022, stands among Europe's most advanced digital railways, combining real-time signalling and integrated control systems to significantly increase passenger capacity.

# Looking forward

As the UK's Civil Engineers strive to design, plan and deliver pioneering innovation amid financial and capacity constraints, what progress is being made to address the sector's most pressing challenges - and what grounds do we have for confidence in the years ahead?

## Policy and vision

We've touched on the Government's 10 Year Infrastructure Strategy, which commits £725 billion to UK infrastructure over the next decade - a level of investment with the potential to be transformative across the sector and introduces a comprehensive digital pipeline to encourage greater confidence for investors.

Another notable recent policy with the potential to positively impact the UK's infrastructure pipeline is the default 'yes' presumption for new housing developments near well-connected train stations, announced in November 2025. This approach aligns housing growth with existing transport infrastructure, which will hopefully lead to more efficient use of established capacity and reduce the need for costly road or rail expansion. At the same time, it has the potential to catalyse wider investment in public services, utilities and community infrastructure - supporting more integrated, sustainable place-making.

## Clean data and accurate land assessment

The sector must now prioritise the use of consistent, accurate data to help infrastructure evolve at scale and pace. Positive initiatives across public and private sector are already championing cleaner, interoperable data across projects, assets, products and materials to ensure streamlined delivery.

Informed decision-making, grounded in clear, accurate insight at the earliest stages of project conception, is crucial to achieving the best outcomes. And this all starts with land.

> “Early, accurate land intelligence is fundamental to controlling cost, protecting programme certainty and avoiding delays in any project. As energy-intensive infrastructure expands, authoritative land data - underpinned by rigorous referencing and integrated geospatial insight - becomes critical.
>
> We’re seeing first-hand how fragmented datasets and incomplete records can stall progress. Getting the data right from the start will be one of the defining factors in successfully delivering the infrastructure the UK needs into the future.”
>
> **Peter King | Land Referencing Consultant -** TerraQuest

The challenge ahead of the UK’s Civil Engineering sector is considerable - but so is the opportunity. The next era for Infrastructure will not only be defined by ambition, but by alignment between policy, investment and delivery. We have the capability to achieve extraordinary things over the coming years - and it’s an exciting moment to be part of what comes next.

# Looking to find land and explore opportunities?

Our Land Finding Service identifies viable sites that fit your goals, giving you clear, informed options from the outset.

Here's what you can expect as we guide you from initial brief to tailored land opportunities.

Starting with a **geospatial search.**

Using advanced **technology and exclusive data.**

You'll receive a **full site assessment,** with key insights.

Supported by **local authorities & senior stakeholders.**

We **support you** every step of the way.

## Inside our team

Discuss your requirements and see how we can help TerraQuest *Land Acquisition Service*.

Speak to an expert

Powered By TerraQuest

**For more information, visit**
land@terraquest.co.uk | 0121 234 1300 Sixth Floor Suite, 31 Temple Street, Birmingham, B2 5DB