KAO DATA

THE QUIET REVOLUTION: HOW DATA CENTRES REMADE SLOUGH AND SECURED THE UK'S DIGITAL FUTURE

Introduction

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On a September afternoon in 2001, a quiet panic settled over London's financial district. The skyline of Canary Wharf was unchanged, but the mindset of the city had shifted permanently. The attacks on New York's World Trade Centre had jolted London's banks and trading houses into rethinking something they had long taken for granted: the safety and resilience of the infrastructure that powered the UK's economy.

For decades, London's financial markets had run on concentration, towers of people, racks of servers, rows of trading floors, all packed into Canary Wharf and the city. But concentration, the industry realised in the autumn after 9/11, was also vulnerability. A single catastrophic event could not be allowed to take down the systems that underpinned Britain's banking, payments, insurance and trading.

There quickly emerged a need for a resilient location outside London where digital systems could function and provide redundancy from the city's financial districts.

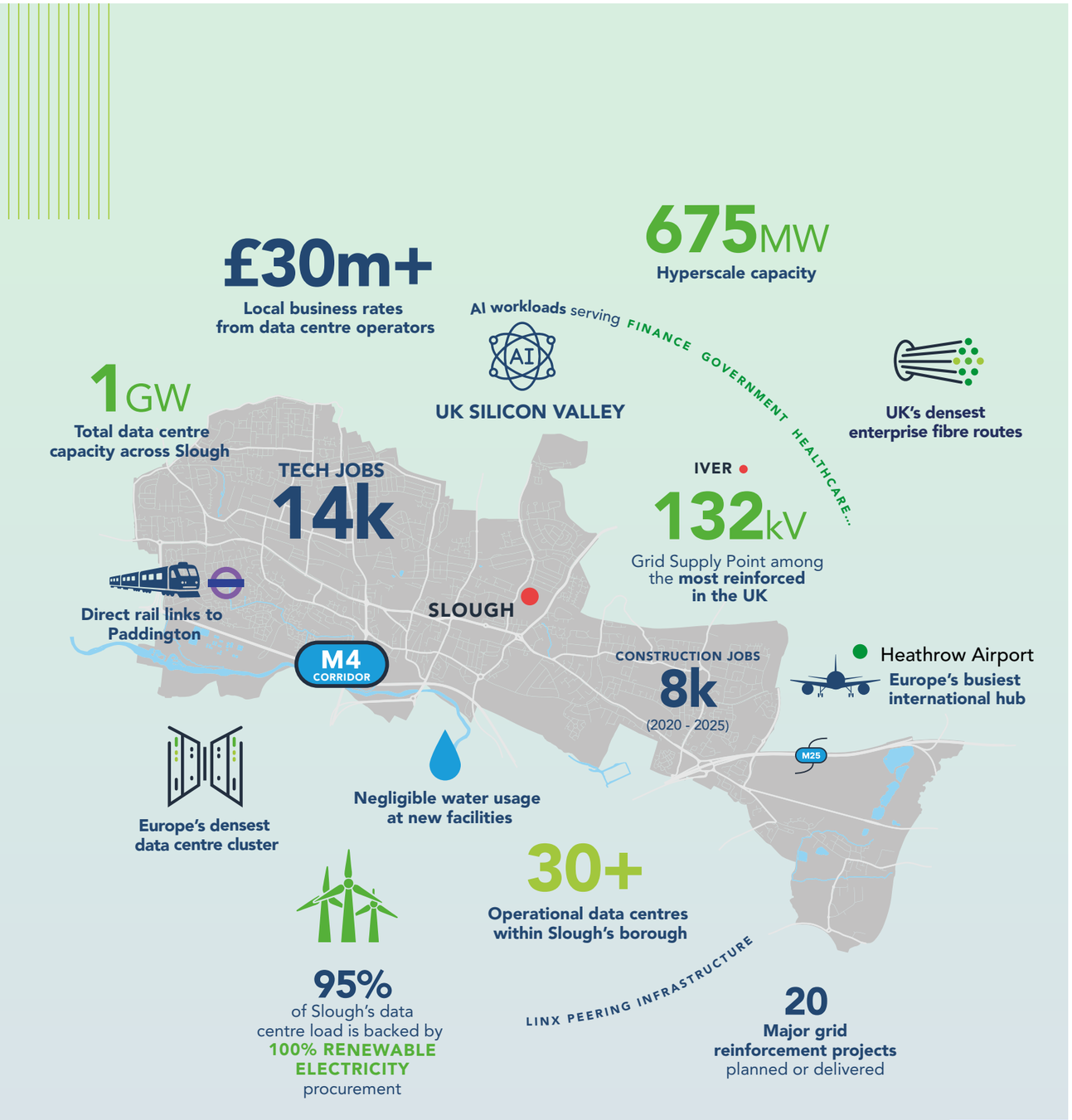
It needed to be close enough for instant connectivity, close enough to maintain millisecond-level financial latency, close enough to feel culturally and commercially part of London's spine. But it also needed distance: distance from risk, distance from centralisation, distance from the kind of event that could put London offline.

A map was drawn. A circle around London. And Slough sat perfectly in the middle of every requirement.

What happened next, over the following two decades, would transform a working industrial estate west of London into the second largest digital hub in the world.

This town, often caricatured in popular culture has now become one of the most strategically important locations in the modern British economy and shows **how data centres and digital infrastructure can together revitalise and support economic growth and prosperity.**

SLOUGH - CLOSE ENOUGH TO FEEL CULTURALLY AND COMMERCIALLY PART OF LONDON'S SPINE.



Slough: In Focus

LOCATION & SCALE

- Europe's densest data centre cluster compromising 1GW of compute
- 30+ Operational data centres within Slough's borough
- Core location for UK cloud availability zones serving finance, government, healthcare and AI workloads.

NETWORKS

- The UK's densest enterprise local fibre routes - a legacy of years of commercial connectivity investment
- **Heathrow Airport:** Europe's busiest international hub, only minutes away
- The **M4 corridor:** The "UK Silicon Valley," home to Microsoft, Oracle, Adobe, Dell, Huawei, and more
- The **M25, M40, and M3:** Major UK road arteries converging within a short radius
- **Rail links:** Direct to Paddington, now amplified by the Elizabeth Line.

CAPACITY & INVESTMENT

- 675MW of hyperscale capacity
- Billions of pounds in cumulative infrastructure, construction and supply-chain investment since 2005.

EMPLOYMENT & ECONOMY

- ~8,000 construction job-years created (2010–2025)
- ~14,000 jobs supported across direct, indirect and induced activity
- £30m+ per year in local business rates from data centre operators
- Employment levels on Slough Trading Estate broadly stable through industrial transition.

INFRASTRUCTURE

- Iver 132kV Grid Supply Point among the most reinforced in the UK
- 20 Major grid reinforcement projects planned or delivered
- Dense, diverse fibre routes operated by multiple national and international carriers
- Proximity to LINX peering infrastructure.

ENERGY & SUSTAINABILITY

- ~95% of data centre electricity demand backed by 100% renewable procurement
- Widespread transition to HVO for backup generation
- Newer facilities operating with negligible water usage.

A World Unsettled: How 9/11 Forced a Rethink of London's Digital Vulnerability

After the New York attacks of 11 September 2001, financial services firms in Canary Wharf and the city were required to establish credible disaster recovery arrangements. Concentrating critical digital systems in a single urban area was no longer considered acceptable risk. Resilience was needed.

WITHIN 1 HOUR OF THE TRADING ESTATE

2.7m

people with experience in engineering, construction & telecoms

Disaster recovery imposed a narrow technical constraint. Systems had to be located outside London, but close enough to preserve sub-millisecond latency for real-time trading and settlement. Few locations met both requirements, but Slough did.

As later described in Slough Borough Council's 2021 Infrastructure Plan, banks needed sites

"outside of London for emergency planning reasons, but close enough so that the miniscule time delay was sufficiently small to not be an issue to financial markets."

Slough reconciled distance and performance more effectively than any alternative.

Its advantage extended beyond geography. Slough functioned as an infrastructure junction, combining proximity to Heathrow Airport, the M4 corridor, major road and rail links, and dense enterprise fibre networks. This allowed firms to externalise risk without redesigning network architectures.

Slough was not greenfield land. It already hosted power-intensive industry and a technically skilled workforce. Within one hour of the Trading Estate lived nearly 2.7 million people with experience in engineering, construction, manufacturing and telecommunications. The transition to digital infrastructure therefore required redirection of skills rather than their import.

The Planning Decision that Secured Slough's Future

In 1996, the Slough Estates Group (SEGRO) and Slough Borough Council introduced the Simplified Planning Zone (SPZ), providing a pre-approved framework for data centre development. This policy materially differentiated Slough from other UK locations.

While planning approvals elsewhere often took years, Slough's process was measured in weeks, offering an unusual level of certainty for infrastructure investment. Between 2014 and 2024, the SPZ generated approximately £18 million in revenues for the council and has since been extended to 2034.

SIMPLIFIED PLANNING ZONE (SPZ)

£18m

generated in revenues for Slough Borough Council

The effect was to reduce planning risk to a degree unmatched elsewhere, making Slough a default location for time-sensitive digital infrastructure deployment. This put Slough ahead of many other local authority areas who didn't share the same forward thinking to attract and secure data centre investment.

The Domino Effect: When Cloud Giants Turned a Cluster into an Ecosystem

Slough's suitability for large-scale digital infrastructure was established long before the growth of cloud computing. The Slough Trading Estate was designed as a planned industrial environment, with large contiguous plots and infrastructure capable of supporting energy-intensive activity. These characteristics aligned closely with the physical requirements of modern data centres.

Industrial-scale power provision proved critical. Long-standing energy infrastructure evolved into a highly resilient grid, centred on the Iver 132 kV supply point, now one of the most reinforced nodes in the UK network. This enabled sustained expansion without wholesale redesign of local electricity systems.

Connectivity provided a second advantage. Slough sits at the convergence of multiple national and international fibre routes linking directly into London's financial and internet exchange infrastructure. Network diversity and ultra-low latency positioned the estate as an operational extension of London while remaining physically outside the capital.

Labour availability reinforced these structural strengths. A large, technically skilled workforce already lived within commuting distance, allowing data centre development to draw on existing engineering, construction and telecommunications skills rather than importing labour.

Planning certainty converted these advantages into investment. The Simplified Planning Zone (SPZ) introduced in 1996 reduced approval timelines and removed planning risk, enabling rapid deployment that was difficult to replicate elsewhere in the UK.

675MW
hyperscale capacity within Slough

As cloud computing became core infrastructure in the 2010s, American hyperscale operators required multiple availability zones close to London. Slough met these requirements and attracted sustained investment. There is now an estimated 675MW of hyperscale capacity under operation, or under development within Slough.

Density then became self-reinforcing. Power, fibre and specialist supply chains clustered around the estate, transforming Slough from a collection of sites into an integrated tech infrastructure platform.

Between 2010 and 2025, more than 8,000 construction job-years were created alongside several hundred permanent operational roles. Across direct, indirect and induced activity, the cluster supports around 14,000 jobs and contributes over £30 million annually in business rates.

Unlike many post-industrial regions, Slough replaced declining manufacturing employment with digital infrastructure roles on a near one-to-one basis, preserving its industrial employment base.

A Region Transformed: Talent, Supply Chains, and the Economics of a Digital Cluster

Digital infrastructure is sustained by labour as much as by physical assets. Data centres require continuous, on-site operation by skilled technical teams capable of maintaining complex electrical and mechanical systems.

Slough's advantage lay in its industrial legacy. For decades, the Trading Estate employed engineers, electricians and mechanical specialists whose skills translated directly into data centre operations. The shift to digital infrastructure therefore represented adaptation rather than reinvention.

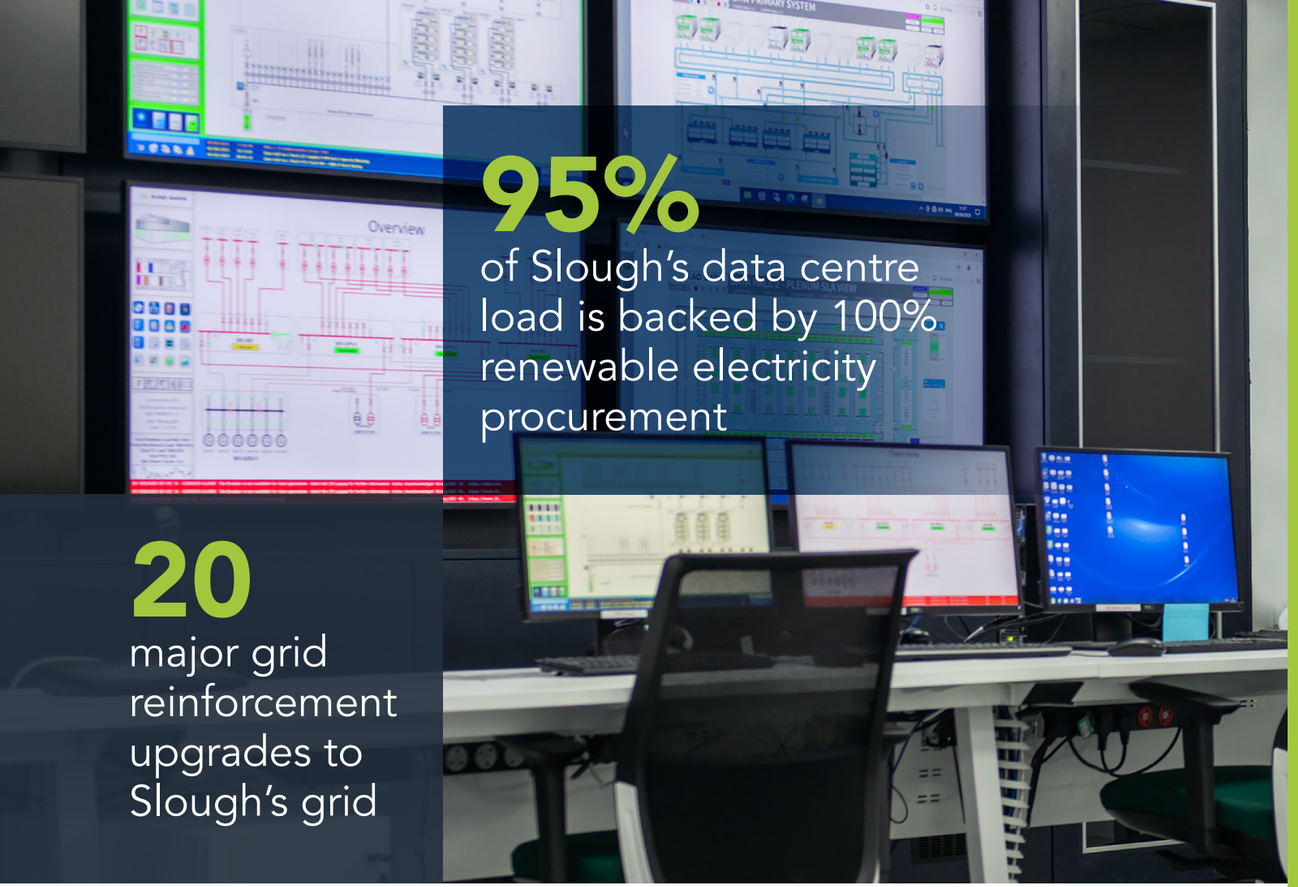
The growth of hyperscale facilities increased demand for specialised roles in high-voltage power systems, cooling, network engineering, security and resilience planning.

These are skilled, site-dependent roles that cannot be offshored, reinforcing the cluster's long-term employment impact.

The economic impact of Slough's data centre cluster extends well beyond direct employment. Data centres depend on extensive supply chains spanning electrical equipment, power systems, cooling infrastructure, construction, commissioning and ongoing maintenance.

Between 2005 and 2025, billions of pounds flowed through Slough's construction, engineering and service sectors. Employment levels on the Trading Estate remained broadly stable between 2010 and 2025, contrasting with decline in many former manufacturing regions.

Digital infrastructure replaced industrial employment on a near one-to-one basis, preserving the estate's role as a centre of skilled industrial work and supporting an estimated 14,000 jobs across direct, indirect and induced activity.



95%
of Slough's data centre load is backed by 100% renewable electricity procurement

20
major grid reinforcement upgrades to Slough's grid

Industry Challenges and Public Perception

Debate around data centres is often dominated by concerns over energy, water and emissions. As the UK's largest concentration of data centres, Slough has been a focal point of that scrutiny.

Power consumption is high because hyperscale facilities operate at multi-megawatt scale to support continuous computation across cloud platforms and critical services that support consumer and business computing all over the UK. However, approximately 95% of Slough's data centre load is backed by 100% renewable electricity procurement or supply agreements.

Only two facilities, a combined 19.5MW, draw from the grid's average generation mix. Even operating continuously at full design load, their theoretical maximum emissions would be 57 kilotonnes CO^2e, far below some public claims.

Claims that Slough's commercial emissions rose by 52% between 2005 and 2020 often failed to account for broader commercial growth and concurrent decarbonisation trends.

Narratives about diesel generator use have also been overstated: backup systems are rarely used beyond regulated testing cycles. Newer facilities, including those run by Kao Data, have moved to Hydrotreated Vegetable Oil (HVO), reducing emissions by 90%.

No industry in the UK is doing more to diversify it's power usage to renewables, it's back-up power to bio-fuels and to ensure energy and water efficiency within its operations is scrutinised.

Water use has also been a public concern. Earlier generations of cooling relied on evaporative processes, but newer facilities in Slough operate with negligible water input. The sector has responded through improved system design and greater transparency.

Power availability remains the most pressing constraint and the main focus of innovation. Slough's grid is being reinforced through twenty major upgrades linked to the Iver 132kV node. Operators are exploring on-site generation, heat-reuse pilots, grid-interactive technologies and hydrogen-ready backup systems.

Digital infrastructure exists because demand exists. Data centres underpin everyday digital services and critical systems, and were designated critical national infrastructure by the Government in September 2024. Slough's planning horizon should be read in that context: future development may need to shift elsewhere, not because Slough has failed, but because the cluster has matured. The UK now needs additional clusters, not indefinite expansion of one.

No industry in the UK is doing more to **diversify** it's power usage to **renewables**

2024
Data centres designated **critical national infrastructure** by the Government

Conclusion

Slough did not become Britain's first 1GW digital infrastructure cluster through branding, incentives or deliberate attempts to manufacture a "tech hub". Its emergence was organic, driven by need, the alignment of geography, infrastructure, workforce and planning certainty over time.

That outcome matters because it was not accidental, and it was not unique. Slough demonstrates that digital infrastructure can replace legacy industry, preserve skilled employment and generate sustained economic value when the right conditions exist, and crucially when local authorities understand the long-term benefit and security of data centres and digital infrastructure.

Today, Slough hosts more than thirty data centres, including hyperscale facilities that underpin 675MW of national cloud capacity and the resilience of financial markets, public services and UK critical systems. That concentration has delivered stability and economic benefit, but it is also a familiar risk.

The lesson of 9/11 was not simply that systems needed to move out of central cities, but that resilience depends on geographic distribution. Just as financial institutions learned that concentration creates vulnerability, the UK now faces a similar challenge in digital infrastructure. Relying too heavily on a small number of mature clusters exposes the economy to systemic risk.

The economic case for expanding data centre development beyond Slough is therefore clear. New regional clusters would strengthen national resilience, reduce infrastructure bottlenecks and replicate the employment and supply-chain benefits already demonstrated in the Thames Valley.

Slough shows what is possible for UK digital infrastructure and sets the benchmark for what comes next in other cities across the UK. The task now is to build on that proof, deliberately, regionally and at scale, so that Britain's AI and digital economies are not only powerful, but resilient.

(Many thanks to the contributions from Carbon3IT, and Parisi for the production of this whitepaper)

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THE TASK NOW IS TO BUILD ON THAT PROOF, DELIBERATELY, REGIONALLY AND AT SCALE, SO THAT BRITAIN'S AI AND DIGITAL ECONOMIES ARE NOT ONLY POWERFUL, BUT RESILIENT.

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