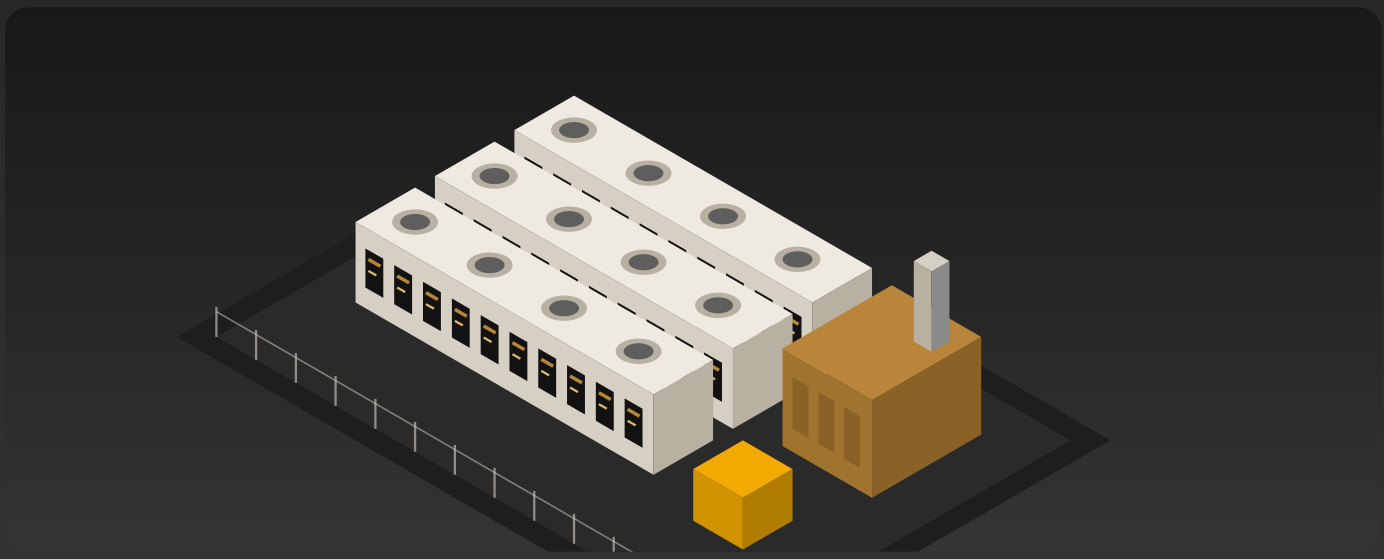
ARKHITEKTON
ENERGY
The Arkhitekts of Global Change

MODULAR DATA CENTRES · 250 KW TO 2 MW

Arkhitekton Energy UD Series Data Centres

Prefabricated, AI-ready Data Centres for university and college campuses, business parks and industrial sites. Built turnkey by CITCC with a UK Tier 1 civils partner, run by UK staff, and sold to capacity buyers in 1 MW blocks.



4
modules, 250 kW to 2 MW IT

40 kW
per rack with liquid cooling

85%
of build funded by the EPC contractor

£0
capital from the host site

Capacity where the power already is

The UK needs far more AI-capable Data Centre capacity, but large sites are stuck in the grid queue. Campuses and industrial sites often have spare grid capacity today. An Arkhitekton Energy UD module uses it, and can be delivered in about a year from financial close.

6 GW
AI-capable capacity the UK says it needs by 2030

73 GW
Data Centre demand waiting for grid connections (Ofgem, June 2026)

45 GW
UK grid capacity against that queue

3.8%
London Data Centre vacancy

What makes the UD Series different

- **Built off-site** – modules arrive by low-loader and are craned into place
- **AI-ready** – direct-to-chip liquid cooling up to 40 kW a rack
- **Funded** – CITCC funds 85% of the build; the host puts in nothing
- **Shared value** – the host takes 50% of net cash, reserved capacity and free waste heat
- **UK-run** – a UK operator with UK staff and UK security standards

Proven on UK research campuses

Containerised Data Centres are already working on UK research sites. One 80 kW N+1 research campus unit was built off-site, craned into place and commissioned within a 12-week programme in 2023. The UD Series takes the same approach to 1–2 MW, AI-ready modules.

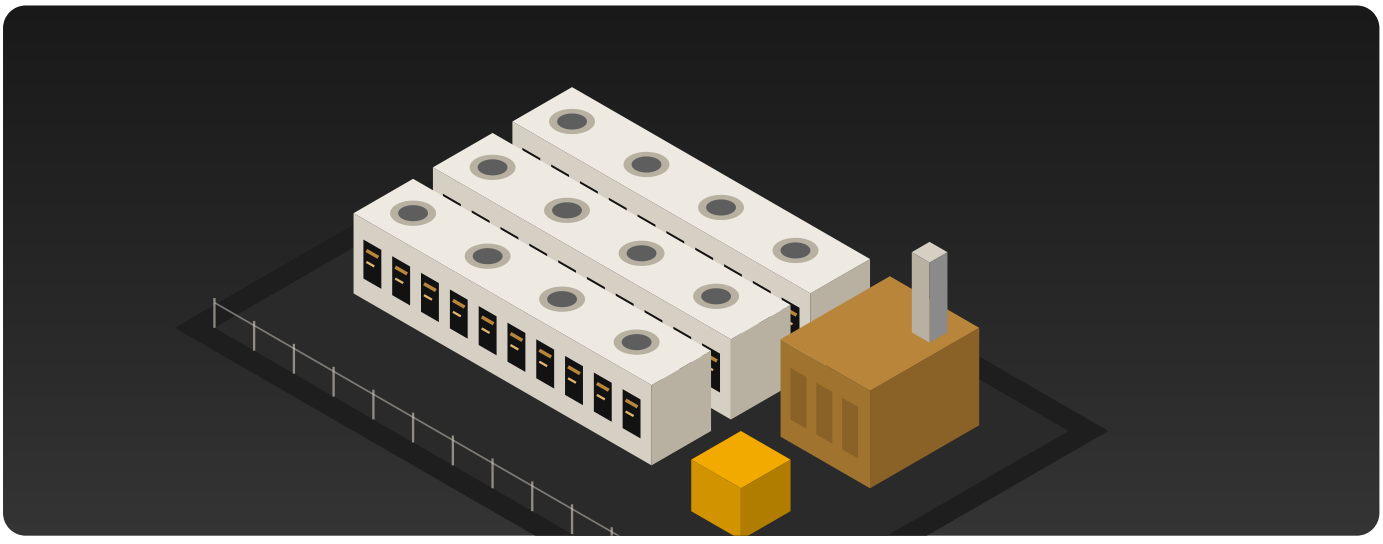


Illustration – UD Series modular layout with power module and transformer

Sources: DSIT compute roadmap; Ofgem via TechRadar (Oct 2026); datacentres.com (Sep 2026); Schneider Electric (Pirbright)

Four modules for every kind of site

Module	IT load	Racks	Cooling	Footprint	Grid supply	Design PUE	Typical site
UD-250	250 kW	13 at 20 kW	Air + rear door	~110 m²	0.36 MVA	1.35	FE colleges, edge
UD-500	500 kW	20 at 25 kW	Air + rear door	~180 m²	0.68 MVA	1.30	Smaller universities
UD-1000	**1 MW**	**25 at 40 kW**	**Direct-to-chip liquid**	**~250 m²**	**1.32 MVA**	**1.25**	**Universities, AI inference**
UD-2000	2 MW	50 at 40 kW	Direct-to-chip liquid	~450 m²	2.57 MVA	1.22	Research-intensive campuses

UD-250 · COLLEGE EDGE

Replaces server rooms at FE colleges and small campuses, with spare capacity sold to local public sector and SMEs. Standby generation stays under 1 MWth.

UD-500 · CAMPUS

Research computing for smaller universities plus regional colocation for other institutions.

UD-1000 · CAMPUS AI

The core product: 25 liquid-cooled AI racks in about 250 m², with waste heat to the campus heat network.

UD-2000 · CAMPUS PLUS

For universities with grid headroom and an anchor buyer; full planning permission route.

Inside every module

POWER

- Dual A+B feeds to every rack
- N+1 UPS and batteries
- Standby generators on HVO fuel, 24-hour autonomy
- Transformer and HV switchgear

COOLING

- Direct-to-chip liquid to 40 kW a rack
- Facility water about 30–45°C
- Rear-door option for air-cooled racks
- N+1 cooling plant

SECURITY

- Fenced compound and CCTV
- Two-factor access control
- 24/7 UK network operations centre
- BPSS-vetted staff

CONNECTIVITY

- Diverse fibre to at least two carriers
- Janet connection on university campuses
- Separate from the host's network
- Remote hands included

How big a Data Centre can go on a campus

Permitted development

Universities and colleges can add buildings up to the greater of 250 m² or 25% of their April 2021 footprint, up to 6 m high (5 m within 10 m of the boundary), without planning permission, for their own use (GPDO Class M).

Selling capacity

A Data Centre selling capacity to third parties is a B8 or sui generis use and needs full planning permission, with EIA screening and 10% biodiversity net gain.

Backup generators

Standby generators of 1–50 MWth are medium combustion plant and need a permit before they run. Testing is limited to 50 hours a year per set.

~1 MW IT
under permitted development: every campus has at least 250 m² of allowance, enough for a UD-1000

2–5 MW IT
with full planning: the practical campus ceiling, set by grid headroom

>5 MW IT
needs a dedicated 33 kV connection: a stand-alone Data Centre, not a campus module

Module	Footprint	Grid supply	Generators	MCP permit	Planning route
UD-250	110 m²	0.36 MVA	0.8 MWth	Not needed	Class M (own use) or full
UD-500	180 m²	0.68 MVA	1.6 MWth	Yes	Class M (own use) or full
UD-1000	**250 m²**	**1.32 MVA**	**3.1 MWth**	**Yes**	**Class M (own use) or full**
UD-2000	450 m²	2.57 MVA	6.1 MWth	Yes	Full planning, EIA screening

Further education colleges

FE colleges have been classed as public sector since November 2022: Managing Public Money applies and new borrowing needs Department for Education consent. The UD Series needs no borrowing by the college, which grants a peppercorn lease and takes no financial exposure.

Sources: GPDO 2015 Sch.2 Pt 7 Class M (SI 2021/428); GOV.UK specified generator guidance; DfE. Wales, Scotland and NI have their own rules.

CITCC: turnkey builder for digital infrastructure

China International Telecommunication Construction Corporation

FOUNDED	1983
HEADQUARTERS	Beijing, China
PARENT	China Telecom Group
COVERAGE	31 provinces · 30+ nations
PERSONNEL	17,000+
ROLE	Digital infrastructure

Turnkey, single point of responsibility

CITCC designs, procures, builds and commissions every module, power and cooling system under one fixed-price EPC contract per site.

Funds 85% of the build

CITCC provides EPC finance for 85% of the project cost at 6%, repaid from capacity revenue over 15 years. The host never borrows.

UK Tier 1 civils partner

CITCC is already partnered with UK Tier 1 contractors for groundworks, foundations, drainage, HV and site works, built to UK standards.

Builder, not operator

After handover CITCC has no remote or network access to control systems or customer data, and attends site only under escort for warranty work.

How a site is delivered

1. **Survey** — Plot, grid, planning and heat network review.
2. **Contract** — Site lease, host agreement and CITCC EPC.
3. **Build off-site** — Modules built and tested; UK civils on site.
4. **Install** — Delivered, craned in, commissioned.
5. **Operate** — UK staff run the site; buyers move in.

CITCC profile as supplied by CITCC. CITCC name and logo shown as EPC contractor.

85% EPC finance, 15% equity, 50/50 with the host

Module	Project cost	CITCC finance (85%)	Equity (15%)	Value to host a year	Host cash share, 20 yrs
UD-250	£3.2m	£2.7m	£0.5m	£0.12m	£2.4m
UD-500	£5.9m	£5.0m	£0.9m	£0.25m	£5.2m
UD-1000	**£10.7m**	**£9.1m**	**£1.6m**	**£0.72m**	**£11.4m**
UD-2000	£20.2m	£17.2m	£3.0m	£1.53m	£24.9m

UD-1000 – steady-state year

£4.08m
revenue

£1.47m
EBITDA after power and operating costs

£0.94m
CITCC debt service

£0.53m
net cash, split 50/50

~17%
equity IRR, payback ~8 years

What the host receives

- **50%** of net distributable cash every quarter, open-book
- **10%** of capacity reserved for its own research and teaching at the cost of power
- **Free waste heat** to its heat network from liquid-cooled modules
- **£1 a year** peppercorn lease for a plot of about 600 m²; no capital, no borrowing
- Cash share rises to about £0.74m a year on a UD-1000 once the EPC loan is repaid

Protections

- Fixed-price EPC with CITCC
- URDG 758 advance payment, performance (10%) and warranty (5%) guarantees
- Contractors' all-risks and third-party liability during the build
- Funders' step-in rights and a decommissioning reserve from year 10
- Option for the host to buy the plant at market value at the end of the term

Indicative base case: 85% of capacity sold at £220/kW/month, CITCC loan 6% over 15 years. Subject to survey, planning, grid and buyer contracts.

Capacity sold in 1 MW blocks, before it is built

Buyer	What they buy	Contract	Typical size
Host university / college	Research computing, teaching, IT estate	10–15 yr reserved	10–30% of IT
Other universities	Shared research computing, disaster recovery	3–5 yr colocation	50–250 kW
NHS trusts and councils	UK-hosted imaging, AI and records workloads	5 yr colocation	50–300 kW
AI start-ups and spin-outs	GPU racks and inference near talent	1–3 yr colocation	20–200 kW
GPU cloud providers	**Liquid-cooled high-density capacity**	**3–7 yr take-or-pay**	**250 kW–1 MW**
Financial services and enterprise	UK-resident AI processing, edge, DR	1–5 yr	5–1,000 kW

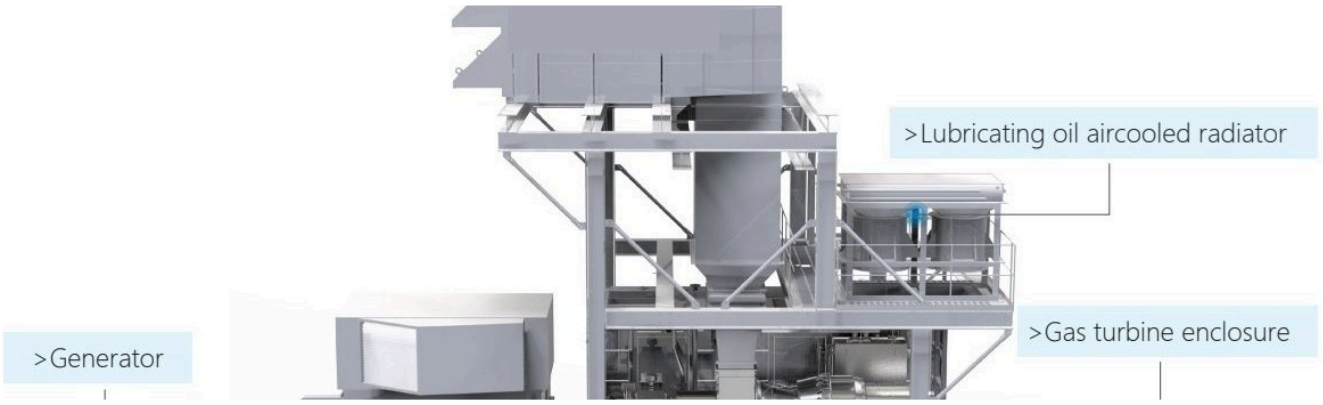
1 MW reservation

- Standard letter of intent reserves a block for 120 days
- Refundable reservation deposit, credited against first invoices
- 5-year take-or-pay service from the ready-for-service date
- Power billed at metered cost; indexation to CPI
- Target ready for service 12 months from financial close

Power and compute on one site

Where the grid is the constraint, pair UD modules with an Arkhitekton Energy UE-7 gas turbine. One UE-7 supplies about 6.85 MW: enough for roughly five UD-1000 modules at a PUE of 1.25, with its exhaust heat driving absorption chillers or a heat network.

See the Arkhitekton Energy UE Series brochure.



Arkhitekton Energy UE-7 gas turbine generator set

Order over 1 GW, get your own brand

Developers, utilities and energy companies whose combined orders of UE Series gas turbines and UD Series Data Centres exceed one gigawatt receive their own white-label range: the same proven equipment, built by the same EPC and manufacturing partners, sold under their name.

STANDARD

Any size

- UD Series equipment under the Arkhitekton Energy name
- Equipment, turnkey or funded options
- Full sales and technical support

PARTNER

Resellers

- Distributor and referral terms by territory
- Brochures, models and contracts in your branding on request
- Commission agreed in writing

OWN WHITE LABEL

>1 GW combined

- Your own product names and range
- Your brand on the equipment, documents and site signage
- Dedicated proposal, engineering and service team

How the 1 GW is counted

- **Combined** across gas turbine electrical output and Data Centre IT load
- **Across all sites** in a framework order, not one project
- **Example:** 100 × UE-7 (685 MW) plus 300 × UD-1000 (300 MW) plus 10 × UE-2 (20 MW) = 1,005 MW
- Orders can be placed in phases under one framework agreement

What your white-label package includes

- Branded product range, brochures and specification forms
- Branded host-site deck, financial model and contract templates
- Turnkey delivery by CITCC with UK Tier 1 civils
- Maintenance by the original manufacturers, behind your brand
- Manufacturer disclosed to funders and regulators where required

Talk to us about a framework

Tell us your pipeline of campuses and sites and the mix of Data Centre and generation capacity. We will prepare a framework proposal with phased delivery, pricing and your white-label range.

White-label terms are agreed in a written framework agreement. Thresholds and terms subject to contract.

Built for campus security reviews

Data Centres are designated Critical National Infrastructure in the UK, and universities apply Trusted Research and export control checks to their partners. CITCC's parent is China Telecom Group, so every UD Series site keeps CITCC as builder only and is run by a UK operator.

UK operator

Each site is owned by a UK-incorporated, UK-managed company and run by UK-based staff.

No access after handover

CITCC has no remote or network access to control systems or customer data; site visits are escorted.

Vetting and standards

BPSS for unescorted access; ISO/IEC 27001, NCSC Cyber Assessment Framework and NPSA Data Centre guidance.

Separate networks

Facility networks are split from the campus network; network equipment is chosen with the host's IT security team.

NSIA check

Each equity deal is assessed for mandatory or voluntary notification under the National Security and Investment Act 2021.

Research security

Reserved capacity follows the host's Trusted Research, export control and ATAS procedures.

Next steps for a host site

1. **Site screen** – plot, footprint allowance, grid headroom, heat network
2. **Anchor buyer** – letter of intent for at least 40% of capacity
3. **Pre-app and DNO** – planning pre-application and connection offer
4. **Sign and close** – lease, host agreement and CITCC EPC; build

Talk to Arkhitekton Energy

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All figures are indicative and do not form an offer. Projects are subject to survey, planning consent, grid connection, buyer contracts and financial close.