



Reliable, Resourceful.

Designing Access Systems for Data Centre Environments

A practical engineering guide to platforms, walkways, rooftop plant access and maintenance routes

Target audience: MEP consultants, critical systems engineers, structural engineers, architects, and contractors.

Core engineering principle: Access should be treated as part of the building and plant design — not as a late-stage product selection.



Why access needs early consideration

Late access planning creates avoidable clashes, blocked routes, and costly redesigns. Designing the route before selecting the product secures maintenance pathways early.

- **Personnel & Tasks:** Define who needs access (operators, contractors) and what needs servicing (valves, panels, filters).
- **Equipment Replacement:** Account for the full dimension, weight, and transit path of removable plant components.
- **Structural Interfaces:** Coordinate connections with roofs, steelwork, concrete bases, and parapets.

Design stage	Key access activity
Concept / Early design	Identify maintenance zones, primary routes, and level changes
Developed design	Coordinate platforms, walkways, stairs, ladders, and structural supports
Technical design	Validate design loads, dimensions, fire performance, and specifications
Construction	Verify installation sequencing, tolerances, and connection interfaces

The access challenge & designing for maintenance

In congested data centres, access must function as a connected operational system, not standalone platforms.



Operational challenge	Engineering consideration
Dense plant areas	Clear maintenance routes without clashing with cable trays and pipework.
Rooftop exposure	Weather resistance, drainage falls, wind load, and long-term durability.
Live site constraints	Phased installation and maintenance while critical servers remain live.
Future modification	Adaptable access arrangements as plant configurations evolve.

Rooftop plant access & coordination

Rooftop plant areas present complex spatial demands. Access arrangements must coordinate directly with the building envelope and roofing strategy.



Roof interfaces & waterproofing

Coordinate support points and penetrations with the roofing build-up.



Drainage & falls

Ensure support feet and walkways do not obstruct roof falls, drainage outlets, or gutter clearance.



Route continuity

Bridge level changes between roof decks and plant plinths seamlessly using integrated stairs and ramps.



Installation

Modular delivery to site for quick and easy installation. No need for a hot works permit.

Platforms, walkways and level changes

Avoid the 'product-first' trap: establish route geometry, loading, support locations, and task clearances before specifying catalog items.

ACCESS ELEMENT	PRIMARY FUNCTION IN DATA CENTRES
Walkways	Continuous, slip-resistant transit routes across plant rooms and rooftops.
Platforms	Stable, secure working positions positioned at equipment interfaces.
Stairs	Primary, ergonomic access for regular personnel transit across level changes.
Ladders	Compact access where space is restricted. Non-corrosive for outdoor use.
Edge protection	Engineered guardrails and kickplates protecting open interfaces and perimeters.
Bespoke structures	Custom-engineered solutions for tight plant clearances and complex geometries.



Material selection & GRP advantages

Glass-reinforced plastic (GRP) provides exceptional performance in demanding mission-critical facilities.

Corrosion resistance & durability

Impervious to moisture, aggressive atmospheric conditions, and chemical exposure.

High strength-to-weight ratio

Significantly lighter than steel, accelerating site handling and reducing structural roof loading.

Electrically non-conductive

Natural non-conductive properties enhance safety around high-voltage equipment and cable routes.

Slip resistance

Integral gritted surfaces maintain superior traction in wet external conditions.

Certified compliance: Manufactured to BS EN ISO 14122-3:2001 and BS 5395-1:2010. Third-party verified EPD supports whole-life carbon assessments.

Structural design, fire & electrical compliance

Access platforms are primary structural elements that require rigorous structural calculations and regulatory compliance.

Structural design parameters

Calculate for dead loads, live personnel traffic, dynamic maintenance loads, deflection limits, and wind uplift on exposed roofs.

Fire rating (Bfl-s1)

Relinea GRP gratings achieve Bfl-s1 fire classification under BS EN 13501 for commercial flooring.

Substrate & retrofit

Verify existing steelwork or concrete slabs on brownfield or expansion projects before finalizing fixings.

Electrical verification

Verify anti-static and non-conductive requirements against specific plant room classifications.

Multidisciplinary coordination & specification

Access systems bridge structural, architectural, and MEP disciplines. Early digital coordination prevents costly on-site clashes.

Project stakeholder	Critical coordination focus
Architect & Structural	Overall spatial planning, structural loads, roof interfaces, and connection details
MEP & Critical Systems	Plant maintenance clearances, cable tray containment, and pipework routes
BIM / 3D Modeling	Clash detection between access steelwork/GRP and dense service runs prior to fabrication
Specification Checklist	Define system geometry, verified material properties, design loads, slip/fire ratings, and installation sequencing

End-to-end design through to installation

Connecting technical design directly with manufacture and site installation guarantees that engineering intent is delivered without compromise.

01

Understand

Review project, plant layout, and maintenance parameters.

02

Develop

Model access routes, support points, and spatial coordination.

03

Engineer

Validate structural calculations, fixings, and material specs.

04

Specify

Issue coordinated fabrication drawings and technical data.

05

Manufacture

Fabricate custom GRP and structural assemblies off-site.

06

Supply

Coordinate phased delivery aligned with craneage and site access.

07

Install

Expert installation by specialist teams.

08

Handover

Provide complete documentation, test certs, and sign-off.

Start Your Data Centre Access Project

To get started, send us the following project information and we will assess your requirement and advise on the most appropriate design and delivery route.

- General arrangement drawing
- Environment and exposure conditions
- Access routes and loading requirements
- Programme stage

One Coordinated Scope

A single point of responsibility across design, manufacture and installation simplifies interfaces, reduces risk and keeps your programme on track.



One coordinated scope simplifies interfaces between design, manufacture and installation.

We work with engineers and consultants at every project stage — stage — from early feasibility through to construction issue. The earlier we are involved, the more value we can add.

Engineering-Led

Structural analysis and full technical technical documentation

Bespoke Design

Tailored to your asset, environment and constraints

Turnkey Delivery

Design through installation under one scope



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