

**When building any new data centre facility, the civil works stage is a major element of the overall site engineering required.**

Traditional civil works are very intensive in terms of labour, materials, cost and time, making it impossible for ICT companies to respond to market needs for site expansions or new facilities at the pace dictated by today's data boom.

### **The Solution is eCentre Civils**

eCentre Civils use prefabricated elements to reduce civils-related on-site project time by up to 50% compared to traditional civil works. Based on the use of prefabricated module pedestals, pre-assembled formwork shuttering and above ground cable management, the result is a significant reduction in the amount of excavation, formwork, re-bar and concrete required.

Situating cabling and services above ground also makes on-going management and maintenance of the site much simpler, less disruptive and more cost effective. eCentre Civils are less labour intensive; have a lower environmental impact; are more predictable in terms of both quality and cost; and are a more economically effective solution overall versus traditional civil works.



Just as with our eCentre prefabricated data centre buildings, the majority of the components are factory produced and shipped to site ready for final assembly. Using a much smaller footprint than traditional civil works, eCentre civils ensure maximum use of available site space and also allow for multi-story construction.

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### **Modular and Flexible**

The methodology is very flexible and suitable for most climatic and environmental conditions, including seismic zones. And eCentre civils are fully modular – should the site need to grow in the future, the eCentre Civils can be expanded together with the eCentre building itself, with no operational interruption to the pre-existing facility.

Flexenclosure can assist in site selection as well as designing optimal layouts for particular sites, to cater for business, operational and environmental considerations. We also carefully manage construction plans to ensure minimal disturbance to neighbours.

### **Uptime Institute Compliant**

eCentre Civils have been designed in line with the Uptime Institute's guidelines and are compliant with Tier 3 and Tier 4 data centre requirements, with all components being concurrently maintainable and full redundancy provided for routings, cabling and piping. They are also fully compliant with British and European standards and we ensure compliance with local building standards worldwide.

Our guiding philosophy is "what we can see, we can manage", so all services and structures are visible for ease of access and maintenance.

eCentre Civils can cover simply the foundation for the prefabricated data centre building modules, right through to the entire facility site in the case of a full turnkey project. The table below lists the key project stages and their high-level component parts. Checkpoints for quality assurance and customer acceptance are built in throughout the process.

<b>Design Phase</b>	Site Survey	Soil tests; Hydrology report; Site report
	Prefabricated Module Design	Design drawing input to civils design
	Civils Design	Conceptual, detailed and final baseline designs
<b>Construction Phase</b>	Site Establishment	Site clearance; Removal of trees and shrubs; Demolishing and removal of existing temporary structures
	Earthworks and Site Information	Soil investigations; Cutting and filling earth; Anti-termite soil treatment; Finished levels; Surface finish
	Cable Trenches & Ducts	Power cable trenches and ducts
	Foundations of Utility Equipment	Transformer, generator and data centre foundations
	Steel Support Structures	Galvanised steel structures; Cable trays; Connections
	Concrete Works	Samples and materials; Test certificates; Drawings; Cement considerations; Aggregates for concrete; Water for use with cement; Steel reinforcement; Steel fabric reinforcement; Tying wire; Curing and protecting concrete
	Structural Steel Works	Standards; Prefabricated module under-structure; Protective surface finish warranty
	Water Supply & Drainage System	Water supply system; Waste water sewage system; Surface water drainage system
	Fence	Masonry wall fence and gate
	Site Lighting	Site compound; Access road lighting
	Access Road & Parking	Levelling; Materials
	Grounding	Earth mats; Testing/inspection points
	<b>Acceptance Phase</b>	Practical Acceptance Testing
Final Acceptance Testing		Customer takes ownership of the facility
Handover		Documentation and final handover

**Flexenclosure's eCentre Civils deliver fastest time to market for any new data centre project.**