Case Study

Leicester Project for British Gas

British Gas
Looking after your world

British gas is the leading residential and business energy and service provider in the UK. They supply energy and services to millions of homes and businesses, keeping them warm and working by offering the most up-to-date energy efficient technology.

The British Gas Leicester site was a new warehouse that was developed for British Gas. The facility is the main distribution hub supplying the 8,000 mobile service technicians with spare parts and other materials for gas and electrical appliances as well as tools for carrying out servicing work in gas, water and heating installations. Davicon supplied the following system.

Platform Size	:	52.15m x 9.3m less cut-outs for staircases and conveyor giving a net floor area of 478m².
Column Grid	:	4.329m x 4.5m.
Height	:	3.146m to the topside of the platform floor.
Construction Depth	:	343mm, 38mm decking and 305mm structure (giving free height of 2.803m below the mezzanine).
Decking	:	38mm Particle Board (Treadsafe Flek with white M.F.C to the underside, TG2, P6 core).
Baseplates	:	300mm x 300mm x 20mm thick baseplates

DESIGN

Loads	:	**Imposed load** -	5.0 kN/m² U.D.L. plus (we have assumed that this load (includes any point loads from the conveyors)
		Dead load (mezzanine self-weight) -	0.35 kN/m² U.D.L. plus
		Service load -	0.25 kN/m² U.D.L
		(We have made an allowance for services fixed to the underside of the mezzanine floor)	
Deflection	:	All steel members have been designed with a maximum deflection of L/360 in accordance with the requirements of BS5950 Part 1: 2000	
Column Loads	:	The maximum column load transmitted to the existing concrete ground floor slab is estimated to be 110kN (unfactored axial load).	



Dynamic Loads	:	Included a suitable allowance for the dynamic load from conveyors.
Stability	:	Based upon the fixity of the beam to column connection to resist the applied horizontal loads. No cross-bracing was used.
Fixings	:	All connections made using Grade 8.8 bolts with spring washers.

ACCESS

Staircases	:	2 No standard staircases, 3146mm high (to Part K of the UK Building Regulations), 1000mm wide, steel construction with chequer-plate treads, notional 2000mm wide mid-landing, c/w standard tubular twin railed handrail.

ANCILLARY ITEMS

Handrail	:	A total of 55 linear metres (tubular section, twin railed, c/w 450mm M.F.C fascia fixed to the edge of the floor providing 100mm high kicker and 350mm down stand from the top of the decking). Fascia is to be M.F.C where specified with 38mm particleboard.
Pallet Gate	:	1 No “up-and-over” type pallet gate to suit 1200mm x 1000mm x 1000mm high pallet c/w wear plate.

FINISHES

Surface Finishes	:	Main steel (Beams) – shot-blasted and primed, with 1 coat shop-applied semi-gloss low VOC top-coat (RAL 9002 – Grey White)
	:	Main steel (Columns) – shot-blasted and primed, with 1 coat shop-applied semi-gloss low VOC top-coat (RAL 5015 – Middle Sky Blue),
	:	Particleboard decking – White flek topside and white M.F.C underside,,
	:	Deck-beams – galvanised,
	:	Handrails – galvanised
	:	Handrail posts – powder-coated RAL 5015,
	:	Staircase stringers – painted 1 coat shop-applied semi-gloss low VOC top-coat (RAL 5015),
	:	Pallet Gate and Wear Plate – powder-coated RAL 5015,
	:	Staircase treads – powder coated RAL 5015,
	:	Fascia – finished white.