



TOPDECK MODULAR CAR PARKS

FEATURING SPEED-BUILD TECHNOLOGY



100 spaces in 5 days*



TopDeck Modular Car Parks can be the answer to your parking problem.

By incorporating Speed-Build Technology a TopDeck Car park can be erected over the top of your existing car park in a matter of days to increase your parking capacity by between 80% and 100% (typically).

Disruption to existing parking is minimised and can often be partially or even wholly maintained during the short build period.

Demountable and relocatable construction.

Cost effective solution to your parking problem.

*based on standard modules and installation







Speed-Build Technology

TopDeck Car Parks have been designed incorporating many examples of Speed-Build Technology to enable installation to take days not months.

Modular design - for fast, consistent erection.

No Foundations - if site conditions are suitable.

Screw Pile Foundations - for rapid installation if foundations are required.

Pre-Finished Anti-Skid Decks - for rapid commissioning and a quick handover.

Automatic Lane Markings - rubber seals between modules visually delineate parking bays.
Access lanes identified by colour of deck coating.

No Wet Trades On Site - to save drying times and to avoid weather dependency.

Plug & Play Electrics - for fast installation of accessories such as lighting and CCTV.

Integral Safety Barriers - pre-fitted and independently tested to BS6399.

Modular Ramps and Stairs - for rapid attachment to parking modules.

Optional Speed-Build Cladding - where required.



De-mountable for Future Proof Investment

If the ability to demount the car park in the future is required and re-assemble it elsewhere, then height adjustable columns are used to allow for variations in the terrain. This is very useful where the total development of your site over the next few years has not been finalised.



Off Site Construction

Modules are built in our Newport factory and the water resistant, anti-skid, grit-coat surface is also factory applied and the safety barriers are pre-installed. The hinged columns are incorporated where required for structural integrity with maximum accessibility. Manufacturing systems to BS EN ISO 9002 and galvanising to BS EN ISO 1461:1994 ensure quality control. The units are delivered to site in a 'flat pack' state for rapid assembly as each unit is securely attached to the previous one. The hinged columns are swung into place and locked down.





Innovative Design

The patented, innovative design of TopDeck Car Parks meets all relevant building regulations and standards, even when used as a temporary structure. The flexibility of the system allows TopDeck to be used on awkward shaped sites or where access is restricted without compromising existing facilities. Ramps are located for optimised traffic flow and stairs for pedestrian safety.



Modular Construction

A TopDeck Car Park consists of a series of standard or bespoke modules in a carefully optimised layout that maximises the potential for your site. In theory there is no minimum or maximum number of parking spaces in a TopDeck Car Park but typically they are between 70 and 700 spaces. Standard modules are 16 metres long comprising two opposing parking bays at 2.4 m x 4.8 m separated by a 6 m access way.



Integral Safety Barriers

Our sister company Berry Systems are market leaders in car park barriers and their expertise has been employed to design the integral safety barriers that not only meet the requirements of BS 6399 but also the latest recommendations from the Institute of Civil Engineers and the Institution of Structural Engineers.

The Flexi-Panel barriers are delivered to site attached by hinges at the base only and can be quickly swung upright and locked into position. They also provide an immediate 'working at height' safety to perimeter edges – aiding the overall speed of build.





Modular Ramps and Stairs

Ramp units are self adjusting to the terrain and allow for gradients between 1:7 and 1:10. The system always employs 1:12 transition modules at the top and bottom to avoid the danger of cars grounding. The anti-skid, grit-coat deck surface also includes a grip enhancing, chevron pattern on the ramps. Pedestrian access is normally provided by DDA compliant, single lift, stair modules that are quickly bolted into place. When required, pedestrian access ramps can be fitted to allow wheelchair access to the upper deck.





External Facade

A number of options are available for the external facade of the car park. These enable TopDeck installations to harmonize with local styles, corporate colours and/or planning requirements. Assistance can be given with planning applications.



Barrier Panels

The Flexi-Panel safety barriers can incorporate infill panels of wire mesh, arco grating, or perforated sheet. They can be powder coated to any RAL colour and perforated panels can incorporate logos or other designs or even screen printing.



Cladding

Where architectural or planning considerations require full or partial cladding to the car park, this can be included as part of the TopDeck design and installation. An extensive range of cladding choices can be specified.





Gabions

Where retaining walls or lower deck cladding is required, Gabions are a popular choice and are available with a wide range of infills.



Steelwork Coating

The main galvanized structure can be coated to any RAL colour if required to match surrounding buildings, for corporate image or to increase the general aesthetical appearance of the parking deck.

Typical applications of colour are to perimeter columns, perimeter edge beams and vehicle impact barrier systems to enhance external aesthetical appearance. Coating the main deck beams on the underside of the structure can also be carried out if required.





Lighting

The design and layout of the external and under deck lighting comply with "Dark Skies" (open area only) criteria limiting upward lighting and give an even balance across the site to eliminate any poorly lit shadowed areas.

Final specification of average and minimum LUX levels, together with emergency lighting, need to be agreed with the client to determine the required light fittings and wiring.

To enhance the demountable concept of the Speed-Build deck, lighting is provided as standard in a 'Plug & Play' design unless requested otherwise.

Options for zonal switching of lighting, movement sensors, etc, to reduce electrical consumption should also be considered at the design stage.



Lighting – Lower Deck

This is typically via self-contained galvanized steel trunkings, busbar or similar systems.



Lighting – Upper Deck

Working in conjunction with our sister company, Mallatite Ltd, we can provide a range of different lighting columns to suit almost any requirement. Mallatite's range of Superflex columns provides a hinged lighting column which allows maintenance of the light fitting to be carried out safely at deck level.





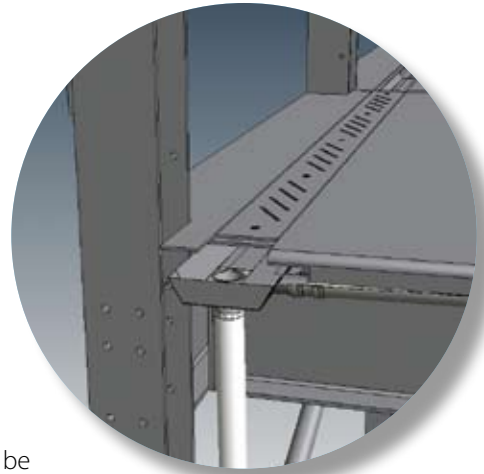
Rainwater Management

The standard Speed-Build deck units are installed providing a 1:50 gradient across the length of the deck for rainwater run-off. Our deck surface is a resin based industry standard waterproofing system providing both water resistance and required slip resistant values.

As a minimum, suitable rubber profile joints and underside guttering is adopted between each deck unit to contain potential water ingress.

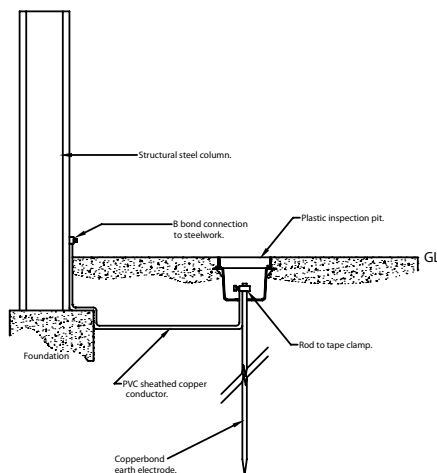
Additional rainwater collection guttering systems can be added to the perimeter of the deck, together with internal deck joints where the system is installed 'back to back'.

Appropriate down piping can be connected to the guttering systems, normally located within the column sections for protection, to disperse water at ground level.



Lightning Conduction

Lightning conduction is normally provided through provision of earthing rods and copper tapes connected to the structure at required locations via the columns. A fully detailed conductivity assessment is carried out to the installed structure to ensure compliance to BS6651 : 1999 (Protection of structures against lightning).



3 Phases of Planning and Design

The planning and design of a TopDeck installation is typically in three phases. Phases One and Two are provided free of charge.



Phase 1

The initial concept is developed including a draft layout from satellite photography.



Phase 2

Either from provision of suitable CAD layout drawings of your site, or an initial site measure visit, a fully detailed CAD plan with elevations can be produced. This is normally deemed to be sufficient if a planning application is required.



Phase 3

A full ground investigation report allows the design to be finalised and 3D Site Modelling to be produced. Optional site laser scanning for full "walk through" virtual images is also available.



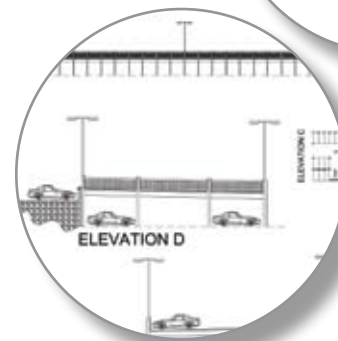
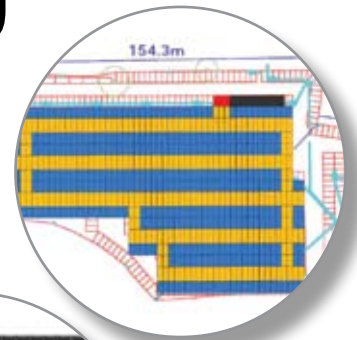
Finance Options

TopDeck Car parks are to be purchased only.



Project Management

Not only will TopDeck install the car park in conformity with all relevant standards and regulations (including health and safety), but can also co-ordinate and project manage other activities. This could include the installation of CCTV, fire and smoke detection systems, pay and display equipment, etc. Please contact us for further details.





Foundations

The need for and choice of foundations will vary depending on whether the TopDeck installation is demountable or permanent considered in conjunction with the local ground conditions. Thorough ground investigations are carried out to determine precise requirements and to ensure that currently installed services and drainage are not disrupted.

TopDeck employs the services of independent structural engineers to carry out any Site Investigation reports and provide our client with recommendations as to the suitability of existing ground conditions and any required foundation detail.

Foundation Options

	Demountable (Adjustable Columns)	Permanent (Fixed Columns)
Base Plate only	X	
Concrete Pad or Strip	X	X
Screw Pile	X	X
Pile Foundation		X



Base Plates

Frequently, foundations are not required for demountable installations where the ground conditions are suitable. Columns can be sited on base plates over most surfaces including tarmac, concrete, landscaping and even compacted hard core. Regular inspections ensure correct adjustment of column heights.

Concrete Pads or Strip

For permanent installations, or where ground conditions dictate, a simple concrete pad or strip is installed to prevent subsidence

Screw Pile Foundations

Where a more substantial foundation is required or as an alternative to concrete, Screw Pile foundations are used for quiet, speedy installation.

Pile Foundations

In a very few cases traditional pile foundations may be required because of challenging ground conditions.





Site Specific Traffic Flow Marking

Individual parking bays are pre-marked on TopDeck modules but additional traffic flow markings can be applied on site.



Access Control

Swing arm barriers, height restrictors, speed ramps and traffic lights can all be supplied, many from the range of our sister company Berry Systems.



Signage

Almost any form of Traffic or other signs can be supplied.



Column Protection

Impact protection jackets are available in a wide range of colours to protect columns in vulnerable areas.



Lifts

Powered lifts are available to provide disabled access to the upper deck or for people with prams, push chairs or shopping trolleys.



CCTV

CCTV systems can be fitted, if required, to customer's specification.



Technical Specification

The car park structure comprises standard modular deck units with columns typically spaced at 2.4m/4.8m or 7.2m centres.

Typical deck unit layout includes for 2.4mx4.8m parking bays, c/w a 6m driving aisle.

Minimum height clearance to underside of beams below deck is 2.2m.

No internal bracing to main deck spans.

Deck parking structure is manufactured from a steel frame and deck system, with a resin based grit coated surface, providing slip resistance value of 45 in both wet and dry conditions.

Ramps are provided either in nominal 1:7 or 1:10 gradient with 1:12 transitions at both the top and bottom connection points. Again finished with a resin based grit coated surface, providing slip resistance values of 60 in both wet and dry conditions.

Staircases are fully DDA compliant

Structural Standards

Structural design loads have been designed as a minimum criteria in BS6399.

Dead load = 1.5kN/m²

Live load = 2.5kN/m²

Snow drift/Wind load = BS6399

Column impact – the structural frame carries all imposed loads on removal of any column to reduce the risk of any column failure due to impact from a vehicle below.

Design complies to the structural fire requirements outlined in

National standard for steelwork design
BS5950 Part 8 : 2003)

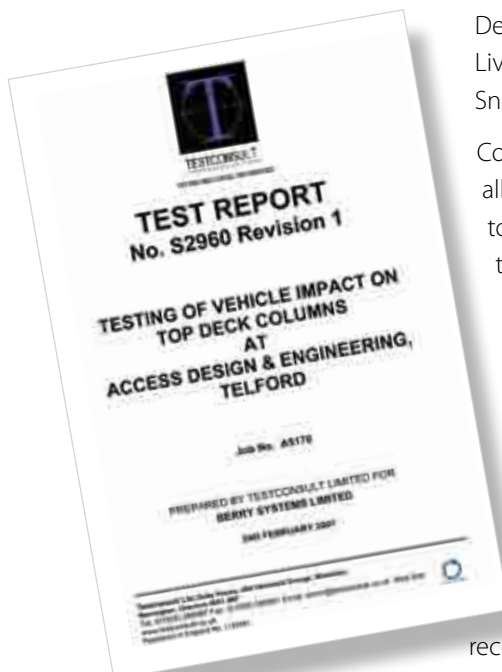
European standard for steel design
(BS EN 1993-1-2)

Perimeter vehicle impact barrier, c/w anti-climb handrail and balustrade, designed to meet the requirements of BS6399 and ISE 2002 recommendations

Standard finish to main structural components – Hot dip Galvanising to BS EN ISO 1461

Emergency lighting to BS5266 pt 1 1988 where requested.

Lightning Protection to BS6651:1999 (Protection of structures against lightning)



Who Are TopDeck?



TopDeck Parking was formed by Hill & Smith plc in 2007 to develop the market for modular car parks. The group has a turnover of over £420,000,000 and has unrivalled expertise in transport infrastructure.

Facilities are principally based in the UK, France, USA, Thailand and China. Many of the group companies are market leaders in their fields and include, amongst others:

Hill & Smith Ltd highway safety barriers

Berry Systems car park and industrial safety barriers

Varley & Gulliver Ltd integrated bridge parapet solutions

Asset International Ltd vehicle restraint systems and galvanized steel structures

Brifen wire rope safety systems

Mallatite Ltd lighting columns, traffic signals and sign posts

TechSpan route guidance and information systems

CA Traffic intelligent traffic information systems

Weholite water management solutions

Redman Fisher Engineering Ltd steel and aluminium flooring, platforms and gantries

Joseph Ash Ltd galvanising

The expertise and experience of all these companies has helped to create TopDeck Parking and the financial stability of the Hill and Smith Group provides confidence and security.



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