

REIDsteel

CAR-PARKS



Single & multi storey

REIDsteel can design and build your multi-storey car parks, so that they are **safe, easy to use and economical.**

An advantage of steel framed car parks is that the building can be designed around the car parking not the parking shoe horned between the columns as with concrete car parks. Steel framing is lightweight, strong and slender, allowing large clear open floor spaces, with minimum floor to floor heights.



REIDsteel have been in design and construction of steel framed buildings since 1919. We are rated A1 (highest) in the Register of Qualified Steelwork Contractors (RQSC) which qualifies us to design and make every form of structural steelwork, from light architectural steel to the largest aircraft hangars and heaviest industrial plant.

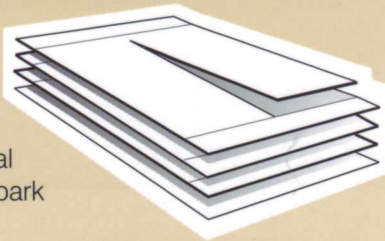
www.multi-storey-car-parks.com

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Layout

Spiral car park

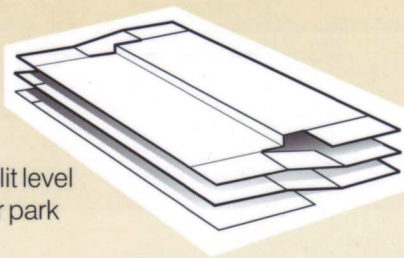
This is probably the most efficient car park layout. The spiral car park needs to be about 16m wide and a minimum of 57m long to work well. Users spiral up and down on the same ramps.



Spiral Car park

Split level car park

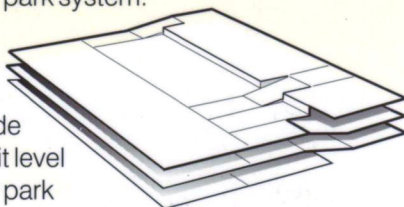
The split level car park is a highly efficient shape, especially suited to a site with a slope of 1.5m over the 32m width. The longer the better for efficiency, it will normally be 32m wide.



Split level car park

Wide split level car park

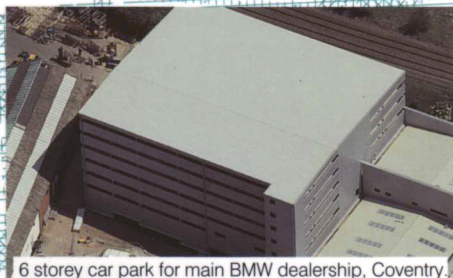
The bigger and wider a car park, the more efficient in terms of cars per square metre. In this case further decks of 16m x 72 m have been added to a split level car park system.



Wide split level car park



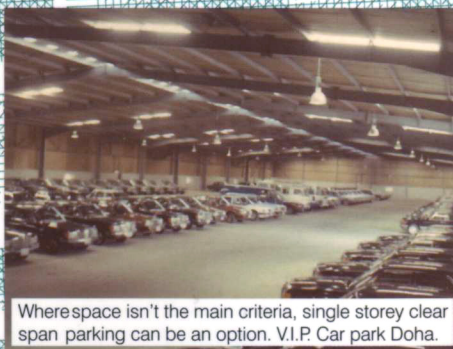
Ground and first floor parking. Supermarket, Guernsey.



6 storey car park for main BMW dealership, Coventry.



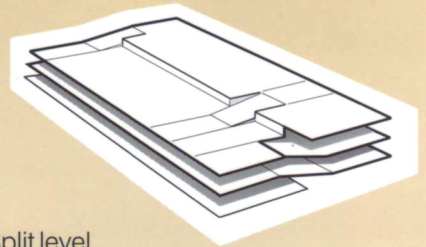
Underground car park for supermarket.



Wherspace isn't the main criteria, single storey clear span parking can be an option. V.I.P. Car park Doha.

Split level car park with quick return ramp

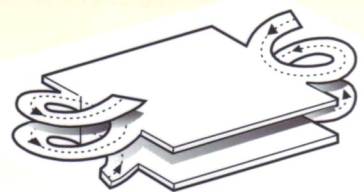
In this variant of the split level car park there is another ramp added at the exit end to speed up exit. Drivers enter and go up by the long way, but go out the short way. On very large car parks more ramps can be added.



Split level car park with quick return ramp

External ramp

External ramps can spiral round at one or both ends; or along one side or both sides; or can wrap around 2 or more sides. External ramps can provide the easiest access and exit solutions, but are not the most efficient in cost per car or car per square metre.



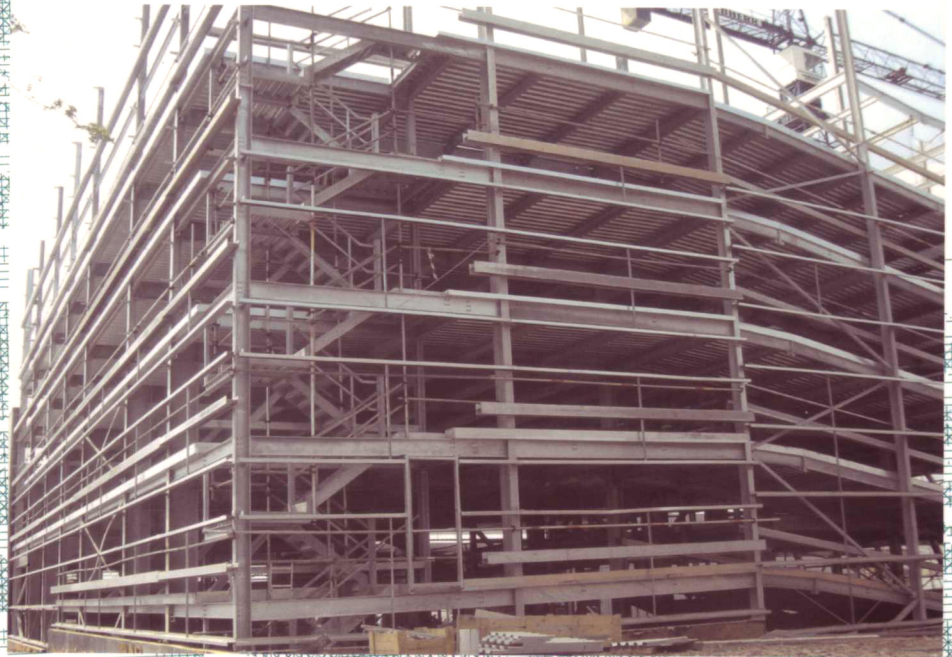
External ramp

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Car parking bays

Car park bay sizes depend on the country where the car park is intended, the size of land available, the vehicle turnover and the use of the car park.

- Country - North American cars are slightly larger and so require larger parking bays and larger roadways.
- Size of land - a smaller area of land may demand smaller bays for efficiency.
- Turnover - if the car park is short stay (4 hours or less) then larger bay sizes are easier to park in and allow faster parking.
- Use less space - A storage car park requires very little space per bay.

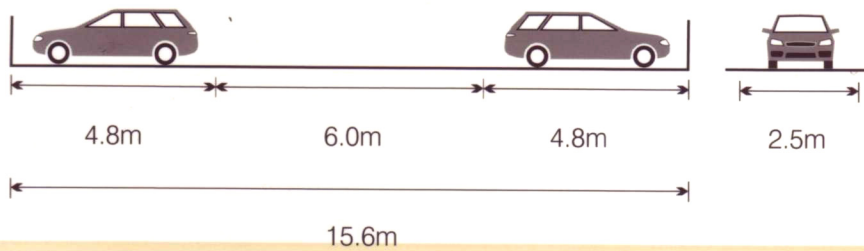


Parking bay sizes

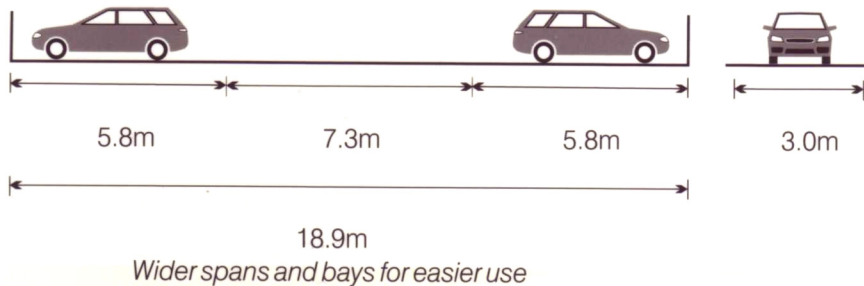
Worldwide Standards

For two way traffic flow we recommend minimum Parking bay sizes to be :

Standard bays - Normal to long term use



Large Bays - For very high turnover car parks e.g; superstores



For further information on Car parking bays please refer to our website:



CAR-PARKS

Decking

REIDsteel can offer three types of Car Park Decking:

- Pre-cast Concrete on steel decking.
- Galvanised anti-skid steel.
- Concrete on our deck forms.

Pre-cast Concrete Decking

A Pre-cast concrete deck is made of precast hollow-core concrete slabs that are supported by steel beams.



The disadvantage is the depth of the resulting floor, because the concrete slabs are quite thick and they sit on top of fairly large steel beams.

Steel Decking

The beauty of steel decking is its modular construction. The steel deck car park is very quick to erect on site, and easily de-mountable if the building is relocated later. The steel deck is sturdy and long lasting. This construction of all steel multi-storey car park gives lighter foundation loads, and a structure which can tolerate more movement. You should always have a roof if you are using steel decking as the steel cannot be waterproofed.

Concrete on our forms

Your in situ decking on our lost formwork. This composite style decking provides a very strong, lightweight, long lasting slim floor for your car park.



It combines the properties of concrete and steel. It's made by supporting steel trays between steel beams. The trays are

then filled with thin reinforced concrete giving a flush concrete surface. The steel trays will support the weight of wet concrete with no propping and REIDsteel provide the trims around the edges of your car park decks.

Waterproofing

If a car park is covered there is no need to waterproof the decks. See *Roofing*

Summary of methods of construction

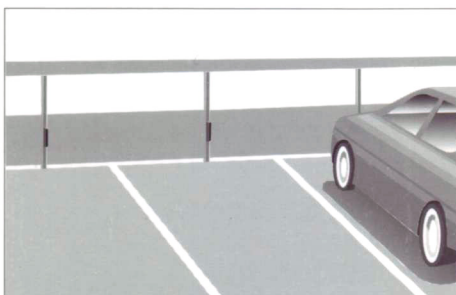
Feature	Steel & Precast	Steel & Insitu lost formwork	Concrete	Steel anti-skid Deck
Shallow Construction	no	yes	no	yes
Large spans	yes	yes	yes*	yes
Waterproofable	yes	yes	yes	no
Demountable/ Re-useable	no	no	no	yes
Cost	med	low	med	low

*Large spans are possible with concrete, though more expensive. Many concrete car parks have thick internal columns, thickly decorated with car paint.

Car Park Barriers

Modern research has shown that car crash barriers in car parks should be centred at 445mm above deck level. The codes say 375mm.

Most crash barriers in car parks are solid steel and damage is caused both to the car and the car park.



REIDsteel like to improve matters. Our barriers go from 350 to 560mm level and have a rubber D-fenders, which deform under load.

The bumpers can be fitted in the centre of each car parking bay, where the car bumpers have no light fittings so damage is less likely.

Pedestrian barriers are fitted between these bumpers and are usually in filled with double sided white plastisol coated galvanised steel, which prevents children climbing up the barrier.

Roofing

REIDsteel recommends that all car parks are covered. This avoids the need to waterproof the decks.

The simplest form of roofing is the Single Sheet Steel Roof, where a single skin of sheeted canopy is erected over the top of the car park. Propped at 15.6m by 7.2m centres or to suit the selected bay sizes, the sheeting is carried on galvanised zed purlins on galvanised steel rafters, with regular external gutters and downpipes.

Steel Frame

All the steelwork should be galvanised to prolong the life of the car park and to lower the maintenance cost.

The steel frame should have columns at about 15.6m+ spacing to avoid any columns where the cars turn into car parking bays. 4.8m+6m+4.8m=15.6m.

The steel frames are normally at 7.2m centres giving 2.4m wide car parking bays, or at 7.5m giving 3 x 2.5m bays.

With clear span steel framed car parks these standard dimensions work well, but bigger car parking bays are available.

Architectural Features

The regular REIDsteel car park is unobtrusive and with its vertical barriers and plastisol infill handrails, not as repulsive as most concrete car parks. With further cladding panels, appearance can be altered. The car park must not have too much cladding or it will need fire protection.

More elegant, and more expensive, steel framing is possible.

Please discuss your architectural requirements with us so that we can build them in at design stage to get your required appearance without too much damage to the function and your budget.

Automatic Car Parking Systems

REIDsteel can build the structure for Automatic Car Parking Systems. We can design slender but stiff structures that have very small deflections demanded by these Automatic Systems. We have built many High Bay Warehouses that suspend Automatic Storage and Retrieval Systems, very similar to Automatic Car Parking Systems.

For further information please contact, Sales at.,

John Reid & Sons (strucsteel) Ltd
Reid Street Christchurch Dorset BH23 2BT
Tel: +44(0)1202 483333
Fax: +44(0)1202 470103
E-mail: sales@reidsteel.co.uk
www.multi-storey-car-parks.com