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
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.

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.

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.

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.

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.

www.multi-storey-car-parks.com
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:

<table>
<thead>
<tr>
<th>Standard bays - Normal to long term use</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4.8m photoshopped to 4.8m</td>
<td>6.0m photoshopped to 6.0m</td>
</tr>
<tr>
<td>4.8m photoshopped to 4.8m</td>
<td>2.5m photoshopped to 2.5m</td>
</tr>
<tr>
<td>15.6m</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Large Bays - For very high turnover car parks e.g; superstores</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5.8m photoshopped to 5.8m</td>
<td>7.3m photoshopped to 7.3m</td>
</tr>
<tr>
<td>5.8m photoshopped to 5.8m</td>
<td>3.0m photoshopped to 3.0m</td>
</tr>
<tr>
<td>18.9m photoshopped to 18.9m</td>
<td></td>
</tr>
</tbody>
</table>

Wider spans and bays for easier use

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

www.multi-storey-car-parks.com
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 precast hollow-core concrete slab that is supported by steel beams.

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

<table>
<thead>
<tr>
<th>Feature</th>
<th>Steel &amp; Precast</th>
<th>Steel &amp; In situ lost formwork</th>
<th>Concrete</th>
<th>Steel anti-skid Deck</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shallow Construction</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>Large spans</td>
<td>yes</td>
<td>yes</td>
<td>yes*</td>
<td>yes</td>
</tr>
<tr>
<td>Waterproofable</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Demountable/ Re-use</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>Cost</td>
<td>med</td>
<td>low</td>
<td>med</td>
<td>low</td>
</tr>
</tbody>
</table>

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

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

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.

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