



That's your Lot!

Next time you reverse into a supermarket parking bay, look around and consider its design requirements. It's not quite as straightforward as you might think, says David Chadwick, having taken a closer look at Transoft Solutions' ParkCAD Version 4.0

Parking is very much on my mind, at the moment. At Williton Parish Council in Somerset, we are in the middle of consultations between the Parish and EDF as it attempts to set up a major construction effort to build Hinkley Nuclear Power Station C without alienating huge swathes of the local population. Part of the exercise involves getting worker's cars off the narrow country roads and 'corralling' them into a number of Park and Rides.

This doesn't help our Parish very much, as workers from Taunton, attempting to escape construction traffic coming off the M5 through gridlocked Bridgwater, will take the A358 instead, making for our very own Park and Ride - hence traffic coming through the village to park and board the buses, and buses negotiating the village again on their way to Hinkley Point. Double trouble!

The bonus - if there is one - is that I shall be getting my very own view of a large car park development right on my doorstep.

I am delighted, therefore, to be able to look at the very latest software tools for creating car parks, namely ParkCAD, produced by Transoft Solutions, who are currently the leading exponents of parking lot design. With the newly released version 4.0 of ParkCAD the tedious drawing of vehicle bays is now happily a thing of the past. Many other factors have to be considered though - sustainability, best use of the landscape, drainage, design - as well as the more prosaic, namely getting the most vehicles in the least space.

PARKCAD 4.0

As I am sure you are aware, the layout of a car park is no longer a simple affair. Land is precious, and owners want to maximise parking spaces whilst accommodate a variety of vehicle types and sizes, including spaces for disabled and children accompanied parking, leaving space to disgorge wheelchairs, prams and unruly children. Designers also have to consider the changing technologies, standard turning circles and capabilities of cars - and their owners - to manoeuvre through the aisles and in and out of each bay.

Capacity comes first however, and ParkCAD's new maximization functionality solves the parking puzzle of which row layout, row rotation, and shifted row position produces the maximum number of parking spaces, producing a list of results from different test iterations to find the row alignments with the highest parking yields.

It's not just about cramming in the maximum numbers of cars, though, as car parks are intrusive areas for some, and besides improving their general appearance, better parking design enables unused space to be used for landscaping; either increasing the amount of green space surrounding the park or placing improved walkways and landscaped plots in amongst the drive aisles - a different type of calculation altogether. The software can also be used to place pervious surfacing (as opposed to impervious) and water retention sections to improve site drainage.

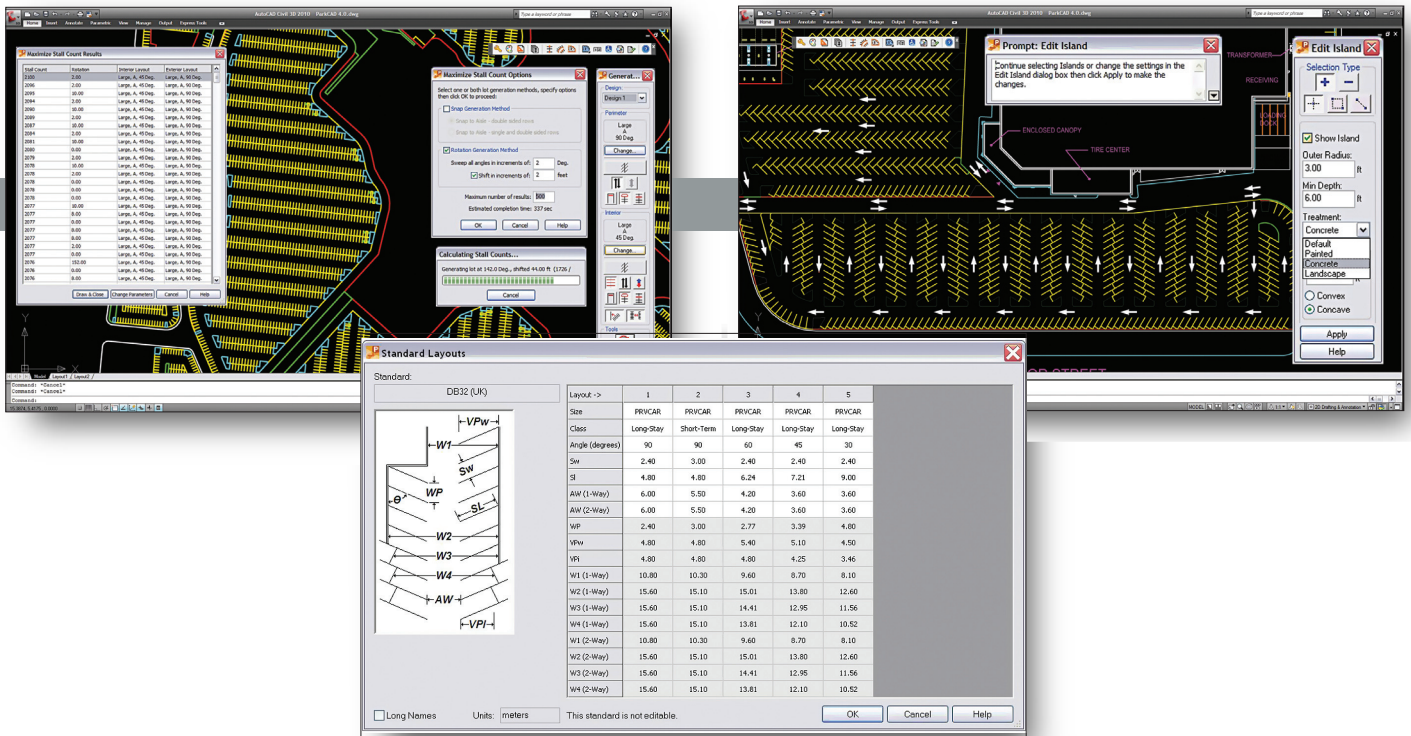
Designers use aisle construction lines to check the area required for vehicle parking manoeuvres, giving them the ability to change lot perimeter and interior row types using different types of parking layout, including: Flat, Arrow, Bumper-to Bumper Interlock, Herringbone or Interlock. Lot boundaries can also include arcs, a new feature of ParkCAD, for the creation of perimeter rows or for the generation of curved access or internal drive aisles. This allows the user to solve more complex parking scenarios.

LOT MECHANICS

ParkCAD is able to minimise lot footprints using a unique calculation method. Centre paths are applied to selected parking rows, allowing excess space to be equally distributed between back to back stalls for additional walkways or landscaping space. Designs can also be modified to maintain the same number of parking spaces with a mix of small and large car spaces, as well as providing additional pervious surfacing for landscaping or water retention in "stall back" islands.

Designers can also select and edit geometric shapes within or across the lot where parking should not be generated - exclusion areas used for structures (buildings, light standards, additional mid-island shapes) and for iterations of drive aisle and entrance placement. And designers no longer have to waste time picking individual parking elements, as groups of parking rows and lots can be selected on a site and used to calculate percentages of accessibility parking and up-to-the second stall counts.

Accessibility parking is a subject in its own right, apparently. Guidelines (symbols and vehicle classes, signage, etc.) have to be consulted, based on your lot's needs. You can check this,



though, using a 'Heads Up' display in ParkCAD that shows the current count and percentages of accessible stalls, notifying you if regulations are met. You can also define the access aisle (left, right, shared) for vehicle loading. This, of course, is in addition to the definition and marking of other types of specialized parking stalls (i.e. courtesy parking, police, taxi/bus stands, shopping cart returns etc), with either default or customized symbols. These stalls are reported separately from standard stalls for quick site assessments

NEW DESIGN MANAGER

Designers are never going to be able to come up with the ideal solution first time, so it is imperative that they can keep a track of designs created, be able to update them at any time, and show all design options when presenting to their clients - to compare those that minimise land use against those that maximise space available. ParkCAD Version 4.0 comes with an updated and improved Design Manager that includes powerful new editing features that cut out much of the manual updating of plans. Using a new Update Lot feature

allows lots to be resized to meet adjusted boundaries whilst retaining prior customisation.

Powerful editing features reduce the downtime of having to manually update new design changes to the existing parking layout. The Update Lot feature allows lots to be resized to meet adjusted boundaries while retaining prior customization. Excess drive aisle space can also now be distributed evenly between rows.

QUANTITY TAKEOFF REPORTS

ParkCAD's reporting functions are comprehensive. It's an essential part of car park design as owners try to comply with local standards - National, including the new United Kingdom (DFT2007) and Spain (PGOUM) parking and accessibility standards (ADA, DETR, AFNOR, etc) plus the need to place ISA symbols within and add striped access aisles next to accessibility stalls. Not to mention trying to keep within budget!

ParkCAD retains specifications of each parking object generated, enabling it to provide lengths, areas and quantities of parking objects where standards are in force, and where costing can be applied. This intelligence is carried

throughout the design, even through editing operations, and aids in all aspects of your parking project. Projects can also be customised, allowing you to set up user-defined standards using a design wizard to comply with your local municipality ordinances.

The same objects can be used to calculate the cost of building the site, with price analysis available from Total Costs right down to Cost per Stall estimates. Previous versions of ParkCAD also included reporting functions for concrete, landscape and painted parking objects, that enabled companies to estimate creation costs. These can now be assigned to parking islands as well, and grouped depending upon the type of treatment required.

Transoft Solutions ParkCAD Version 4.00 will run with all versions of AutoCAD up to the latest 2011, and with Bentley Microstation v8i. The software is available from Transoft Solutions for North America, Europe, and the Asia Pacific region. A multilanguage release is scheduled for July. A demo version can be downloaded for a trial evaluation from the Transoft Solutions corporate website.

www.transoftsolutions.com.