



Country life

Green motorsport is growing in popularity with fans, manufacturers and promoters. But what about the facilities that host them; can they ever be eco-friendly?

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When it's not ringing to the roar of NASCAR engines, California's Sonoma Raceway echoes to the bleating of sheep. Thousands of the animals keep the circuit's 650ha trim, providing an eco-friendly alternative to mowing.

The flocks comprise one part of a wide-ranging sustainability program started in 2004. Sonoma Raceway is now reaping the rewards of measures that not only reduce environmental impact, but also save money and boost staff morale.

The sheep are managed by a supplier called Woolly Weeders, which offers similar services to California's vineyards. "We get virtually all our rainfall from December to March, when the grass grows at a furious rate," explains Sonoma Raceway president Steve Page. "So we've got several thousand sheep digesting our grass and refertilizing the property as quickly as they can."

Other sustainability measures include solar panels that meet about half the circuit's energy needs, with more capacity due in the near future. Battery storage is also under consideration to help flatten the ups and downs of solar supply. "We aim to get as close to 100% of our energy needs as we can," says Page.

The raceway also has aggressive recycling targets. Working with the local youth corps it tries to put 100% of waste left behind after events into recycling streams rather than landfill.

Another local company, Sonoma USA, takes used advertising banners and makes colorful bags and cases. "Thousands of yards of advertising material become obsolete each season," notes Page. In the past 18 months about 2.3 metric tons of banners have been upcycled in this way, with a portion of the proceeds given to charity. The circuit even buys back a selection of goods to give as corporate gifts.

The various ways Sonoma Raceway has approached sustainability highlight the range of options open to circuit owners. "What's been important for us is to make a statement," says Page. "Regardless of your industry, sustainability is something you can take very seriously."

It's an ethos more circuits ought to adopt, argues Clive Bowen, founder and director of Apex Circuit Design. "Motor racing is perceived as an environmentally unfriendly sport," he notes. "Unless the industry self-regulates, the outside influences of government are going to regulate the sport into oblivion."



Sonoma Raceway has its infield kept pristine by flocks of sheep (left), which also help fertilize the ground

Helpfully, commercial and environmental sustainability "tend to run side by side", Bowen says. Energy efficiency, for example, reduces both CO₂ emissions and utility bills.

Apex creates new motorsport venues for clients around the globe and Bowen says a core principle is to source locally. "That's probably the most environmentally sustainable thing you can do," he states.

"Rather than specifying some exotic aggregate from a quarry overseas, what we do instead is what the FIA has always advised: specify the highest grade of highway surface in the country where we're building."

Bowen cites the example of a recent Chinese circuit development. "The site was extremely challenging,



Sustainability in Spain

Spanish F1 and MotoGP venue Circuit de Barcelona-Catalunya has had sustainability goals for more than a decade. It achieved ISO 14001 certification in 2008, driven by the circuit's majority shareholder, the Catalan government. "The circuit is very close to Barcelona with a lot of people living there, so we need to be very careful," says circuit president Vicenç Aguilera.

The most important step is environmental training for staff, Aguilera says, but a clear vision is also vital. At Barcelona, the management team is finalizing a roadmap for future improvements. "It's extremely tough, but we are working to reach zero CO₂ emissions," Aguilera says. "You need 5-10 years to reach an excellent level."

Plans go beyond CO₂ to include water management, recycling and biodiversity. "We have more than 28ha of forest around the circuit," Aguilera notes. "We are looking to make the forest more sustainable and more appropriate to the local climate."

Additional solar panels will be fitted to grandstands, recycling plans will strive for zero waste to landfill, and fresh campaigns will encourage visitors



to make more environmentally friendly choices. "This year we've increased the number of spectators, but reduced the number of cars," Aguilera observes. "The trend is positive and the people are getting more used to trains, buses and bicycles."

In September 2015, Circuit de Barcelona-Catalunya became the first (and so far the only) F1 track to achieve Excellence under the FIA's sustainability scheme. "When you're pressing the team to make things better, an award always makes it a little bit sweeter," Aguilera says. FIM, the motorcycling governing body, has also provided valuable guidance, he adds.

To be effective, sustainability plans must be driven from board level, Aguilera says: "It's key to have one person with a cap on their head saying 'sustainability', to fight against everything that gets in the way." <



with 627,000m³ of rock that we needed to blast. But rather than that being a negative, we used every single ton of rock, crushed it on-site, and built the circuit from it."

Circuit buildings can also be designed to reflect their location. Orientation with respect to the sun can cut energy demands for heating or cooling, for example. The path of the sun is already a consideration for circuit layout, to avoid dazzling drivers or spectators.

Construction industry standards for greener buildings provide good sources of guidance, Bowen adds. "There are two environmental schemes: LEED in the USA and BREEAM in the UK," he explains. "Both are worthy of effort."

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Existing facilities can be revamped and many modifications make a substantial difference. Apex advised the Sepang International Circuit in Malaysia, where it uncovered issues with air-conditioning. "To cool the hospitality space over the pit garages you had to run the entire air-conditioning plant," Bowen recalls. "For 300 days of the year they'd host corporate events in one or two units, but for those people to be comfortable they had to cool every single one of 50-odd units." A modular heating and cooling system offered big savings in both running costs and carbon emissions.

"A lot of venues are designed for major events, when they really should be designed for day-to-day use, with



a strategy for accommodating a major event," Bowen says.

In 2015, Apex was awarded the highest rating under the FIA's sustainability program, which has three stages: Commitment to Excellence; Progress toward Excellence; and Achievement of Excellence in sustainability. Apex urges its clients to join the scheme.

Participating organizations are assessed annually. To reach the highest level they must demonstrate a strong commitment to environmental management, identify sources of environmental impact in their operations and ensure these impacts are monitored, with measurable targets for improvement.

The FIA scheme includes a benchmarking tool, says Ben



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Willshire, managing director of UK-based circuit design firm Driven International. "To take it one step further, there are ISO standards," he adds. "One is ISO 14001, which is an environmental management standard, and there's also ISO 20121, which was developed to coincide with the 2012 Olympics in London."

Willshire's company is currently working with a major motorsport client to help it implement ISO 20121.

Zhejiang Circuit, in Shaoxing, China, is the latest Apex project, and features a number of 'eco' design traits (top)

"Motorsport is arguably the most difficult sport to make sustainable, so we've also been working with BASIS [the British Association for Sustainable Sport], which is leading the way for stadia, golf courses, and the like."

Willshire's advice is to take small steps and measure outcomes carefully. "If you start trying to introduce lots of different initiatives you're going to face problems," he cautions. "The biggest challenge is implementing a mindset and belief across the whole business. Once that's achieved it becomes much easier, because everybody is rowing in the same direction."

He adds that it's important to look outward and assess the environmental impact of the whole supply chain, including partners brought in for major events.

Bowen makes a similar point: "You need to take a helicopter view of all the people associated with racing, whether they are competitors, officials, teams, manufacturers or spectators." <

The spectator factor

➤ "The public tends to think of motor racing as a flagrant waste of resources – burning lots of petrol – but in reality the biggest part of the carbon footprint of motorsport is the spectators," notes Mike Wells, a technical director at engineering consultancy Aecom. "The amount of carbon that's released as a result of them coming and going is far more than a few cars lapping the track."

As a result, it's vital that circuits promote alternatives to arriving by car, such as public transportation systems as well as park and ride schemes, Wells says.

The spectator factor is one reason why Formula E favors street circuits, as Wells notes: "If you bring the cars to the people, rather than the other way around, you can cut out a huge amount of emissions."