

FEATURE STORY

MOTORSPORTS ARCHITECTS

ANCHOR A GLOBAL INDUSTRY

An **anything with a racing engine requires a track.** Anyone who watches the engines on the track prefers a seat. Anyone who keeps the engines going needs a shop. Transforming the aesthetics and functionality of the tracks, seats, and shops into reality is the responsibility of architects and engineers. Motorsports has fashioned its own niche in the architectural industry that is filled by a uniquely talented group of individuals and companies.

No matter where they are located, England, Virginia or North Carolina, the facilities they design and construct are more than buildings. Through the diversity of their projects, which range from mega-developments to track facilities and attractions to team shops and airplane hangars, motorsports architects build the supporting structures that anchor and define the imagery and operations of the global industry.

AT THE APEX

Clive Bowen is the founding director of Apex Circuit Design Ltd. Located in Buckinghamshire, England, his company serves as a motorsport circuit design and master planning consultancy for mega-developments like the Dubai Autodrome, Iceland MotoPark, Silverstone circuit in England, and the Hampton Downs Circuit in New Zealand.



Clive Bowen

Bowen started his career as a mechanical engineer initially in aerospace engineering then in the design and construction management of large factories and the required infrastructure. Those experiences translated

well to building motorsports complexes. He's driven at the amateur ranks and worked for West Surrey Racing, Ltd., a top British Touring Car Championship team, which gives him a deeper understanding of the sport and the industry.

Bowen has designed, conducted feasibility studies, overseen construction and handled sanctioning body approval for projects on four continents. He's provided master planning services for circuits in England, Brazil, India and Singapore. He regularly guides his clients through the sanctioning process. On each project Bowen works with a team of civil and mechanical engineers, drivers, and financial experts to fashion a business plan and architectural design. He then oversees construction.

His first major motorsports project was the Dubai Autodrome. As a consultant to HOK Sport of London and Kansas, the sports facilities group of one of the largest architectural firms in the world, Bowen designed and master planned the 700-acre motorsports complex and business park. He designed the 5.4 km race circuit that can be used in six configurations and is sanctioned by the Fédération Internationale de l'Automobile (FIA), Formula One Management (FOM), and the Fédération Internationale de Motocyclisme (FIM). He also designed the Autodrome's 1.2 km karting track, which is sanctioned by the Commission Internationale de Karting (CIK).

"We apply a hard-nosed feasibility based approach to produce a course and attract developments to build on the periphery," Bowen said. "The value of the land escalates such that the incremental value covers the capital cost of the circuit. We really help derive the vision and generate capital to create a destination and a reason for people to visit, irrespective of motorsports."

A viable commercial approach takes different forms for each project. "The Dubai Autodrome had no real commercial environment for three or four years. It evolved from a dust bowl to a multi-billion dollar development," Bowen said. "We initially proved \$500 million of developed value around the Autodrome. They are now approaching \$2 billion. In Iceland, with its miniscule commercial market in comparison to Dubai, they're moving slowly to fund each phase of development from land sales."

Bowen's clients are mostly developers. They have a general idea of what they want to build when they hire him. He typically spends three to six years working with them as a project manager through each phase of the development.

Bowen derives his vision for each project from the site.

"I've been a driver so I know that success is more than turning the wheel. You have to have a feeling for the surrounding aesthetics and environment," he said. "The type of design we prefer lends itself to road



Diagram of Dubai Autodrome

courses. You're working with the land and that starts the process of creating a vision. Our vision informs the application and planning.

"We always encourage a topographically challenging layout," Bowen continued. "We've established a reputation for designing circuits which challenge drivers, cars and their engineers alike. We create corners and sequences where the vertical geometry has as much effect as the corner radii."

Demand for Bowen's work is increasing. He's traveling to Moscow and, for the first time, to the United States. "After 22 years of experience and a passion for motorsports, we've developed motorsport destination design as a core competency," he said. "This year we have six new facilities to design all over the world. There are so many new projects that are coming and, in the U.S., some are quite spectacular."

One of his U.S. projects is the Alabama Motorsports Park, a motorsports and entertainment complex in southern Alabama with a pool of investors that include Dale Earnhardt Jr. Bowen is consulting on the road course and karting circuit and contributing to the master plan design as part of the HOK Sport led team in Kansas. The park is scheduled to open in 2010 and will feature a Dale Earnhardt Jr. Speedway oval track, a road course, and karting track as well as retail, restaurant, hotel, resort, residential, and entertainment components.

"The motorsports industry is growing in value," Bowen said. "People around the world are on the move, and they want to play. That's good."

THE AI SIGNATURE

Architect Wes Jones of AI Design Group, Inc in Charlotte, NC agrees. He is foundational to the success of one of the biggest forces in American motorsports- Speedway Motorsports, Inc. AIDG handles both the architecture and interiors for office



Wes Jones

buildings, retail centers, headquarters, and racing and automotive facilities. Jones started working with SMI in 1997. Since that time, he's been the lead for the projects at all the SMI tracks including Las Vegas, California, Charlotte, Bristol, and Texas.

Time is Jones' biggest challenge. "If you're doing an office building or most any other kind of facility, you're used to hearing about delays and budget overruns. You can't do that in

racing. You can't miss the deadline. They (the tracks) live and die by their schedule," he said. "If you want to raise the bar on design and create these signature facilities, you have to do it at a break neck pace."

Working for Bruton Smith, chairman and CEO of SMI, signature facilities are expected. Jones describes SMI as "raising the bar on development at tracks." Jones points out the Victory Lane Club tower at Texas Motor Speedway. The nine story building has the grandstand integrated into the structure. Inside, there is a health club, a large gift shop, office space, and a 1,000 seat banquet hall and a tiered restaurant that both overlook the track.



Neon Garage at Las Vegas Motor Speedway

"We've developed an expertise for these kinds of buildings," Jones continued. "A condo building to live in and watch races is different than any other. An office building for media use has its own issues separate from other office buildings. Although some design skills are transferable, notably interiors. There are different concerns that make these buildings more of a specialty."

Jones works with more than the buildings around the track. He designs the ones inside the track as well. "There are so many different components. It all starts with the race. If you can get that more exciting, that's mission number one," he said. "Then you have all of the infield facilities that have to go along with that race like tire storage, a fuel depot, Nationwide garages, Cup garages, a media center, race control, and, of course, the pits. Then all SMI tracks have RV camping in the infield."

The Neon Garage at Las Vegas Motor Speedway is one of the innovations Jones has developed working with SMI. With a special ticket, fans can access a walkway under the track to reach four buildings that together form a diamond shape. The lower levels allow for viewing through large windows with pass-throughs for autograph seekers. The upper levels allow for overhead viewing of race teams as they prepare their cars for the race. The fans can peruse the upper stories and see their favorite teams up close. The center of the Neon Garage has Las Vegas-style entertainment, concessions, souvenirs, and a sports bar.

Jones realizes his job is to make the physical structures the perfect setting for fan experiences. "We are competing for the discretionary money that people have to spend on sporting events," he said. "We want to capture the widest fan base by selling the widest range of experiences someone might want to buy. We consider everything from the quality of the seat they physically sit in to where they are sitting in that seat."

Having so many people sitting in the seats is another challenge. "The single biggest challenge speedways face is just the number of people and the traffic. The \$80 million roadway and infrastructure deal with the City of Concord that was recently agreed to that is keeping Lowe's Motor Speedway in Concord will be critical to getting people there and getting them parked so they can enjoy what's going on. Races are a festival really not just an event."

The festivals vary in size and duration throughout year, which creates another set of challenges. “Speedways are difficult campuses to run. They are built to cater to 150,000 people or better once or twice a year. You have to balance design for the one or two days of maximum occupancy versus all the other days of the year. Parts of the track shut down and are dormant. We have to design mechanical and other systems to deal with that.”

Jones’ latest challenge is the Dragway at Lowe’s Motor Speedway. From the grandstands to the indoor and outdoor areas of the luxury suites, Jones is making sure that there are many ways for fans to experience the races, but his first responsibility is to make sure the drag strip is built on time. “We have the contractors and engineers on board. The first thing we did was sit down as a team and figure out how we could adjust to get it done. It will be done in September in time for the inaugural NHRA national event,” he said. “The quality of the grandstand, the amenities, concessions, restroom spaces, fan care, hospitality areas will be the best on the NHRA circuit.”

RACER OF THE BASKERVILL

Mark S. Lindsey, AIA of Baskervill Architects in Richmond, VA deals with many of the challenges Jones faces. Instead of starting at the top with a company like SMI, Lindsey literally started at the bottom of motorsports projects and worked his way up.

“Our first job was very small. We did a toilet building expansion at Richmond International Raceway (RIR),” Lindsey said. “Then International Speedway Corporation (ISC) asked if we could help with a seating expansion. We started with small projects that have built into bigger and bigger multi-million dollar projects like the Torque Club.”

Lindsey completed a master plan for the RIR that maps out how the track will expand to 150,000 seats over the next decade. As part of executing the plan, Lindsey’s been involved with four seating expansions, suite additions, an infield care center, and the Torque Club.

The 16,000 square foot, members only Torque Club is in the center of one of the grandstand expansions. “The Torque Club, in addition to winning design awards,” he said, “has become one of the most sought after tickets in racing. It is regularly visited by celebrities including the likes of Gene Simmons from the band KISS and several Washington Redskin players who are season ticket holders.”

Baskervill has provided design work at other ISC tracks, including Darlington, Michigan, Martinsville and, the formerly ISC-owned, North Carolina Speedway in Rockingham. Other projects currently in the works are in Toronto, Canada,



Torque Club Lounge



Mark S. Lindsey

Minnesota and Maryland. In Toronto, Lindsey and his design team are designing the new Cayuga International Speedway. Dubbed a multi-use entertainment and sports racing facility, it includes all of the racing and entertainment attractions of a modern facility. The facility will not only have a new oval for the NASCAR Canadian Tire Series, but a NHRA drag strip, a modern road course, campground, swimming pool and an ATV and moto-cross track. Fan amenities will include a member’s only club and special viewing areas from elevated grades in Turns 1 and 2 as well as fan areas in the infield. “All of these features are designed to enhance the revenue stream of the facility on a year-long basis. We probably won’t see the next new, modern track facility being used only for two to three events per year,” Lindsey said.

For the International Motorsports Entertainment Development Corporation in Minnesota, Lindsey is designing a track similar to Cayuga but with retail and commercial components. Tatton Park in Maryland will pull from the Washington, DC area and include a multi-circuit road course, driver training areas, kart track, club house, museum, a high-end restaurant overlooking the track and a significant big box retail development at the entrance to the facility.

Dragons Ridge Motorsports Park in New Kent County, VA presented Lindsey with a creative challenge. The owners envisioned themed villages. From that, Lindsey designed English, French, and Italian villages encompassed garages with first-floor garages and second floor team sleeping areas. A mix-used commercial, office, residential, and entertainment area serves the park year-round and maintains the village theme.

As the driver of an open-wheel race car, a two-car team owner and a crew member in the Rolex Sports Car Series, Lindsey feels

that his racing experience strengthens his job as an architect by bringing first-hand knowledge of the industry and its demands. "We look at tracks holistically. We understand NASCAR to Grand AM and how the vehicles are brought in, the services the crew members need, security, and the public areas."

MOORE OPPORTUNITIES

Carlos Moore of Carlos Moore Architect PA in Concord, NC is another architect who understands exactly what racing teams and businesses need. His specialty is not the places where people race, but the manufacturing, operational, and aviation facilities that are behind the scenes. He's worked in architecture since 1966. Motorsports has been a staple of his business from the moment he opened the doors in 1987.

"My first motorsports project that I got, my brother-in-law walked in and told me he was doing a project for Harry Hyde, who was then crew chief for Tim Richmond at Hendrick," Moore said. "He needed me to help build the foundation for a barn he was going to put all his cars in."

From there his motorsports projects have grown to include an impressive list of the most recognizable names in the sport like Waltrip, Hendrick, Evernham, and Roush. He's also seen a lot of names come and go over the years. "I did about 20 projects for the Mock brothers," Moore said. "In addition to having a team and building race facilities, they built speculative buildings and diversified their income by renting to others in the industry. I think they've sold all of those investments and are into office buildings now."

No matter who Moore works for, he applies a consistent approach. "When we take a client on, we learn their operation. We learn what it takes for a building to function properly for them to do their business," he said. "Motorsports companies are the same. They are in the business of building race cars. They are really manufacturing facilities. The office portion is a public relations office."



Carlos Moore

According to Moore, who is an avid Legends car owner and driver, most of the race shops he designs are one building around 40,000 to 60,000 square feet. Some are as expansive as 80,000 to 120,000 square feet. "Today teams are finding out it's better to have their operation under one roof; otherwise, people are separated. When we started, most of the race teams just wanted a building to enclose the manufacturing of their cars. Now the buildings have more of an image involved. They are good looking buildings. It's all evolved from basic enclosures to sophisticated businesses and buildings."

Moore designs industrial, commercial, medical, and religious facilities. Aviation is another specialty. He has designed airplane hangars for different teams. The hangars are more than a place to park a plane. "We've been very fortunate to design several hangars at Concord Regional Airport," he said. "They have maintenance facilities where they do all of the cleaning and preparation. They have conference rooms, offices, showers, sophisticated battery rooms, and shops to work on parts."

Moore works with support businesses in motorsports to design their facilities as well. He recently completed the design of a 15,000 square foot building for Racing Electronics in Concord. "Basically, I design buildings for people to make a living in, whether its individuals, small companies, or large corporations," he said.

LOOKING LORENZ

Cary Gluf of Lorenz Architecture in Concord, NC is looking at the motorsports industry as a growth area for his company. They completed a 20,000 square foot building for DB Racing in Salisbury, NC owned by NASCAR Sprint Cup driver Dave Blaney. They've completed a renovation and museum for Wood Brothers Racing in Harrisburg, NC. They worked with Robby Gordon Motorsports on the original concept for a 106,700 square foot race shop, office, and retail facility.

Gluf started with Lorenz when they opened in 2003. Before that he worked for Moore and received thorough training in motorsports architecture. **"I got into motorsports when I was at Carlos Moore's and found that I had knack for it," he said. "There's a language to it and a process. You have to understand the manufacturing process, know what equipment it takes to make that happen, where it should go, and combine that with what the client wants."**

The totality of what is required in a race team facility drives Gluf's interest. **"Many times race teams are more forward thinking. It's a chance to do something different," he said. "A full blown race shop has offices, garages, fan areas, marketing, and engineering. You have to find a place for haulers, trailers, and eight to 18 race cars and show cars. Plus the fans are going to come, and you have to give them something worth coming to. You have to make sure there's a circulation route that won't interfere with what the team is doing. There's no other sport like it that let's the fans get so close."**

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We encourage that.” He estimates that 99 percent don’t use the same product on the track and on the street, where they tune for better fuel mileage. Sure, he concedes, some people will get around the EPA regulations, but NADM encourages people to follow them. Although modules boost performance, but void the warranty, “people still do it,” Knoch reveals.

Many tuners are concerned about the EPA cracking down on their business practices. Like Knoch, Banks agrees that “tuners have to stop defeating emissions. “The diesel performance industry is in growth mode; there are more vehicles now. But we’re going to destroy it if we don’t do it cleanly. The EPA and the California Air Resources Board are gunning for us; we have to clean up our act or we’re gone. The future of the diesel performance industry is everyone’s responsibility. It has a robust future, but if it’s not clean, we’ll be gone.”

Although Knoch considers his organization’s job restricted to “keeping the sport alive, making it safe and educating people how to get better performance,” he says NADM is doing its part by offering a clean diesel trophy at each event for the least amount of smoke. But, as he reminds everyone, there’s a “huge difference between diesel on the road and diesel performance in exhibitions. Sled pulling has to have smoke; it’s part of the show!” That said, he quickly adds, “Smoke is a concern. We would love clean smoke events, but 95 percent of performance vehicles still blow black smoke. We’re trying to clean it up, but there aren’t many options: no parts and no tools. We have to work with what’s available: the technology and products for clean smoke are not available yet.

“It’s a hot topic at SEMA and on the forums,” Knoch continues. “Guys are frustrated. The only one telling people how to do it

is Gale. People will emulate him, but the technology isn’t there yet where the common garage mechanic can put the parts on. Banks is a pioneer; these are garage mechanics who don’t have the tools or the parts. Parts aren’t even available yet! What he’s developing now will be available in 2-3 years.”

Banks, however, says parts are available now, under his brand BankSpeed. And Mr. Clean himself is willing to show the way, promising to share information at www.dieselttech.com. Why would the guru of clean give away performance secrets in a highly competitive industry? “If I can help increase the diesel market place, OEMs will succeed and build more vehicles. They win, we (the aftermarket) win, the country wins. If we showcase diesel performance in a clean manner, no one will be confused about where diesel’s going. Clean speed is what we’re about. It’s doable, but you’ve got to invest time and effort to realize the potential out there.”

Potential is plentiful and Banks continues to blaze new paths. “I broke the seven-second record with a road race engine; now I’m building a drag engine. I want the first drag car in the sixes.” To that end, Banks Power engineers are working on a new full-out dragster chassis with a 1,000+ hp Duramax engine that will be raced this summer. In addition to testing ideas and concepts, it’s expected to beat the 200 mph barrier in the quarter-mile. Banks’ goal “is to get 100 mpg from viable vehicles with safety, performance and emissions. It’s the automotive X-prize.” That kind of efficiency would have made Rudolf Diesel proud. 🌿

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With so much depending on sponsorships not all teams make it. In the Concord and Mooresville, NC area, there’s existing square footage already geared for racing. Gluf sees that as an opportunity for renovation projects, and he’s looking at an even broader range of opportunities. “New race shops don’t come along everyday,” he said, “but the network of support is in all kinds of specialties like seat manufacturers, helmet makers, and frame builders. Everything is becoming a specialty. Those shops are setting up here. That’s the secondary market we hope to get involved in.”

Regardless of the opportunities, reputation is critical for a firm like Lorenz that’s building their motorsports division. “This is a very large industry and very close. They know each other and spend a lot of time together,” he said. “They talk to each other. The biggest challenge is being the name that comes up when that conversation happens. Traditional marketing doesn’t work. We stay involved in the industry and understand what they are look-

ing for. No one has to train us. That way when a team calls, you do a good job for them so they will call again, and, of course, tell others.”

Long before a track or team owner can talk publicly about what they’re building, they’re talking to motorsports architects. The architects that fill the specialized needs of motorsports are the ones that give racing the places around the world to operate and entertain.

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For more information, please visit:
www.apexcircuitdesign.com
www.aidginc.com
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