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BY DESIGN

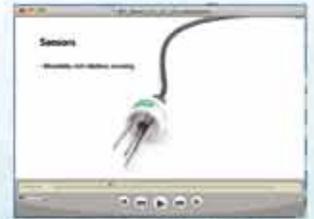


Excellence in Golf Design from the American Society of Golf Course Architects

The new newworld

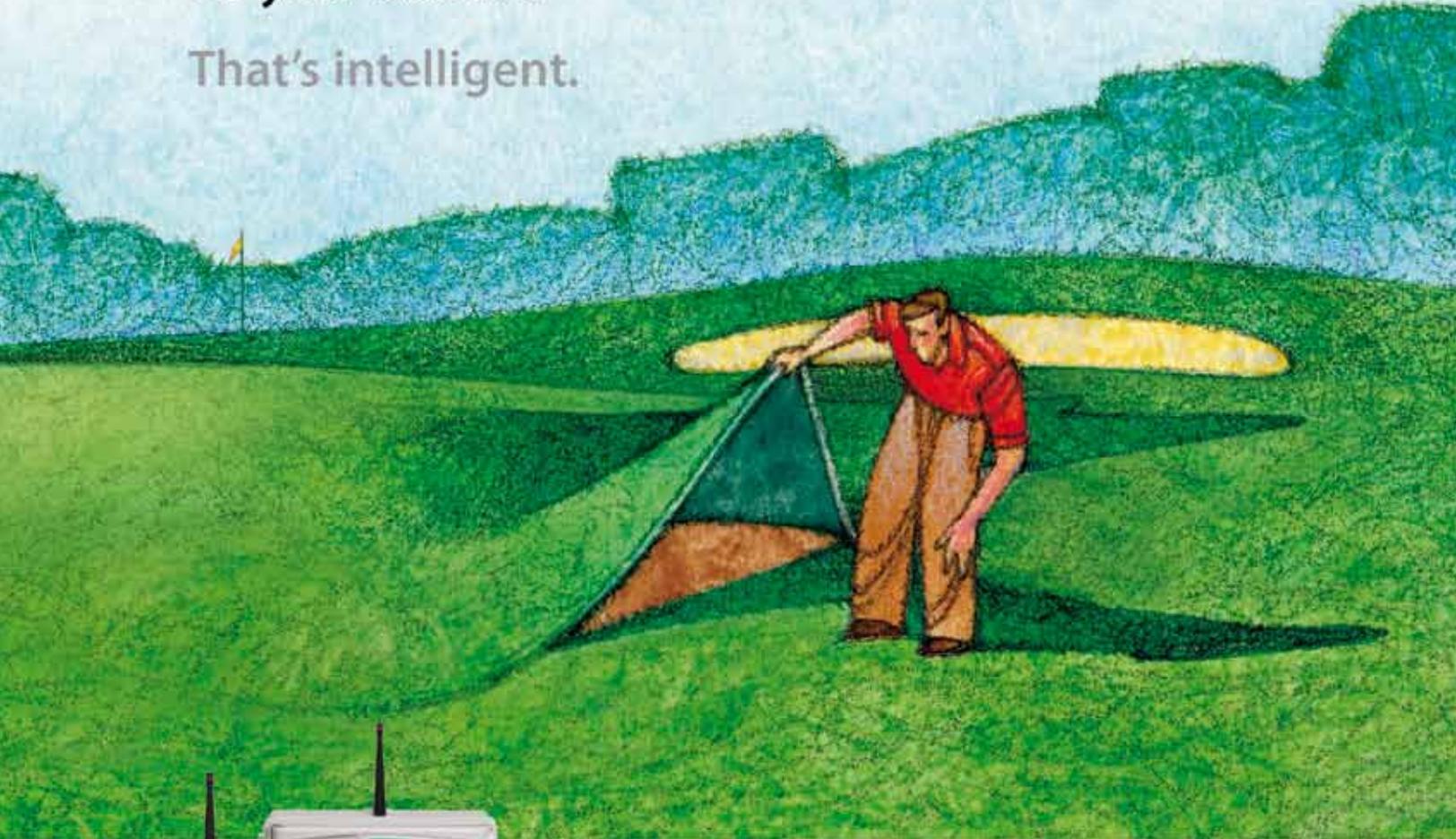
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Having just returned from the Golf Industry Show in Las Vegas, it's interesting to observe the change of mood among golf business professionals. Talking to exhibitors and visitors alike at the show, the mood was noticeably more buoyant than for the last few years—and some were positively filled with optimism!

Whether or not the US golf development sector returns to the levels seen a few years ago, there's no doubt that golf's spread around the world is going to continue. Increasing affluence, combined with the desire for the lifestyle benefits that golf can bring, means that the game—and its associated development opportunities—are becoming more and more appealing to people in countries from Brazil to Indonesia, and at many points in between.

Whatever much of the media may say, it's not just about China and it never has been. Our cover story makes the point: golf development has gone global. And we're delighted to report that ASGCA's Gil Hanse will be designing what will surely become the new, new world's most famous development—the golf course for the 2016 Olympics in Rio de Janeiro.

On a sadder note, everyone in ASGCA, and indeed in the golf business as a whole, was hit by the news of the death of Geoffrey Cornish recently. One of the legends of our profession, and in many ways its greatest chronicler, his legacy will be felt across the golf world for many years to come. He will be greatly missed.

Yours sincerely,



Rick Phelps, ASGCA
President
American Society of Golf Course Architects

BY DESIGN

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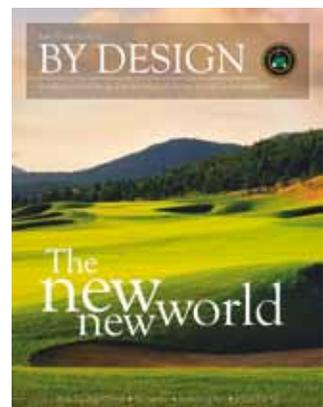
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COVER



Nine Bridges Golf Club in South Korea was designed by David Dale, ASGCA

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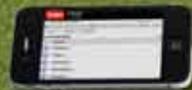
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Count on it.

Olympics

Hanse wins Rio Olympics bid

Gil Hanse, ASGCA, has won the competition to design the golf course for the 2016 Olympic Games in Rio de Janeiro.

Hanse, who partnered with LPGA Hall of Fame golfer Amy Alcott on the bid, has committed to relocating to Rio while the golf course is under construction. An avowed 'minimalist' designer, his plan won approval from the Rio panel because of its aim to accentuate the natural dune formations and retain the native contours of the Reserva da Marapendi site.

"We want to take this opportunity to say how honored and humbled we are to have been selected to design the golf course for the 2016 Olympic Games in Rio de Janeiro," said Hanse. "We will strive to produce a course that will maximize the benefits of the site while creating an identity in keeping with the natural terrain, vegetation and wildlife which will make



A visualization of the proposed seventeenth hole

the people of Rio proud. As the interest of any course is ultimately felt in the way it plays, we hope to construct something that will prove to be a fascinating study in options, recovery shots, and a sense of whimsy. We will seek to provide a joyful design that will reinforce in future generations the unique character of the courses upon which golf is played."

"I congratulate Gil on being selected to design the course that will host Olympic play in 2016," said ASGCA President Rick Phelps. "He is just

one of the many ASGCA members who are assisting in golf's rapid expansion worldwide. From small courses that introduce new players to the game to famous projects like the one that Gil will design in Brazil, ASGCA members are creating layouts to bring lasting economic, environmental and social benefits to communities on nearly every continent."

Hanse said he hoped to break ground on the course this October. Organizers have committed to a trial event in 2015, the year before the Games.

Costa Rica CC recognised for sustainability efforts

The oldest golf club in the Central American country of Costa Rica has earned recognition for its sustainability efforts from the Golf Environment Organization. Founded in 1940, Costa Rica Country Club is a ten hole course located in the Escazú district of San Jose, the country's capital. In addition to driving down resource use, CRCC seeded local criollo grass in all rough grassland area. All landscaped areas use native plants and flowers.

ASGCA honors Kubly

Landscapes Unlimited founder Bill Kubly has been chosen by the American Society of Golf Course Architects as the 2012 recipient of its Donald Ross Award. The award will be presented on 29 April during ASGCA's annual meeting in Chattanooga. Kubly founded Landscapes Unlimited in 1976 and previously worked for golf architect Dick Watson.

Golf Industry Show

Encouraging signs from GIS

'Cautious optimism' was the key phrase coming out of the Golf Industry Show in Las Vegas last week. ASGCA President Rick Phelps and nearly 50 members in attendance shared examples of increased renovation projects domestically and continued growth of the game around the world.

"There is a noticeable improvement in both the amount of work being done and industry expectations moving forward," Phelps said. "Speaking

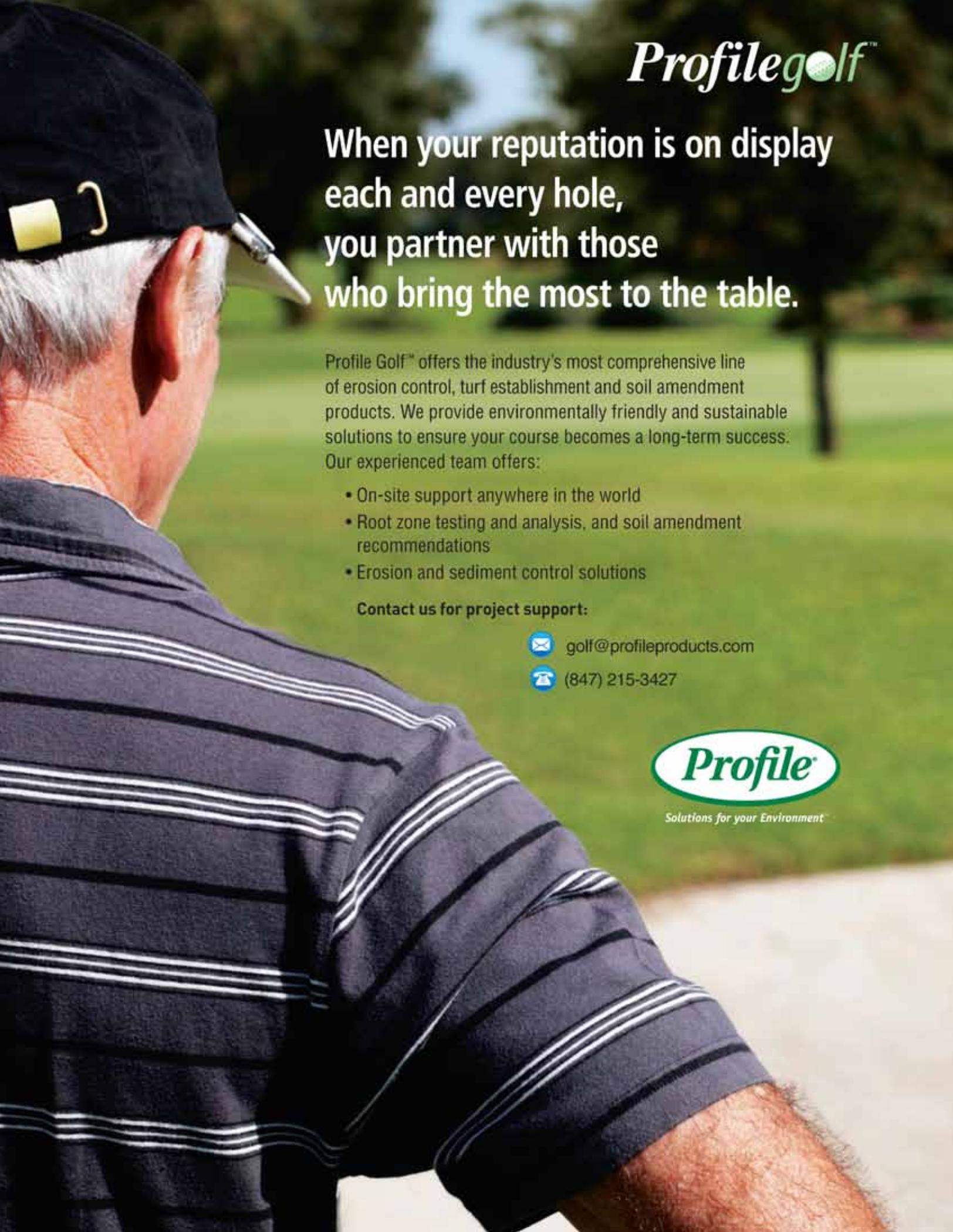
with architects, superintendents or suppliers, there seems to be cautious optimism across the board."

Hopeful stories abounded through the Las Vegas Convention Center, with renovation and remodeling projects placed on hold during the downturn show new signs of moving forward. "There is a sense among some that many clubs have stabilized their memberships and are turning their attention once again to capital

improvement projects, including golf course renovation," Phelps said.

GIS attendees also got their first look at the newly updated ASGCA Life Cycle Chart, including new information on the anticipated longevity of irrigation systems, and PVC and HDPE pipes.

ASGCA Past President Tom Marzolf presented the chart to tradeshow attendees and discussed how use of the chart can help owners maximize the value of their land and materials.



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Solutions for your Environment

Golf 2.0

Family-friendly trial at Wolfdancer

With the PGA-led Golf 2.0 programme focusing attention throughout the industry on growing the game, one Texas course is trying a different approach to attracting new golfers.

Eric Claxton, senior director of golf at the Wolfdancer Golf Club in Austin, Texas, returned from the PGA show in Orlando buoyed by the discussion of Golf 2.0. Described by the PGA of America as the most important initiative undertaken in its 96-year existence, Golf 2.0 is intended to make the game more user-friendly and halt slumping participation by keeping golf relevant and desirable among consumers with less money and more options. And of course, junior golf and family participation in the game are a big part of the equation.

With that in mind, Claxton



Wolfdancer hopes to repeat the family-friendly policies

focused on this year's spring as an ideal opportunity to add another family-friendly activity at the property, which attracts more than 1,500 daily guests during this time period.

On 11 March, Wolfdancer trialled a different look, one that includes over-sized cups and family tees on each hole of its course, which was designed by ASGCA

Past President Arthur Hills and his then associate, Chris Wilczynski, ASGCA. Junior golfers 17-years-old and under played free after midday with an accompanying paid adult. "We are going to see how this first event goes, and then evaluate from there," said Claxton. "I hope we will be able to do this once a month during the summer season."

First Links

'First Links' partnership with PGA

The ASGCA Foundation is partnering with the PGA of America on the new 'First Links' program for golf course owners and operators interested in reconfiguring their layouts and/or devoting open land to smaller scale facilities to allow new players to ease into the game.

First Links provides grants to applicants to pay for visits by ASGCA members to evaluate golf facilities for their potential to develop a short course or practice area, or otherwise modify their existing layouts to welcome new players. ASGCA member consultants will follow up their one-day visits with a site evaluation report describing ideas for layout or open land reconfiguration.

The PGA's First Links initiative harks back to its founding when renowned architect AW Tillinghast was invited to a 1916 luncheon in New York to discuss the formation of a national association of golf professionals. Tillinghast served from 1935-36 as a PGA consultant, traveling nationwide to review 370 facilities.

The First Links grant program embraces both ASGCA's commitment to design that welcomes beginners and the PGA's historical connection to Tillinghast's travels and consulting.

For additional information on First Links, visit www.asgca.org or email aileen@asgca.org.

Vidago protects important aquifer

The Vidago Palace course in Portugal is reaping the rewards of a new water management system, which is protecting the important aquifer, one of the country's largest sources of mineral water, on which the course sits. Portuguese consultancy GEOdesenho created the new irrigation and drainage systems to avoid any pollution of the aquifer. "Test results point to null impacts on the aquifers," said GEOdesenho's Pedro Correia.

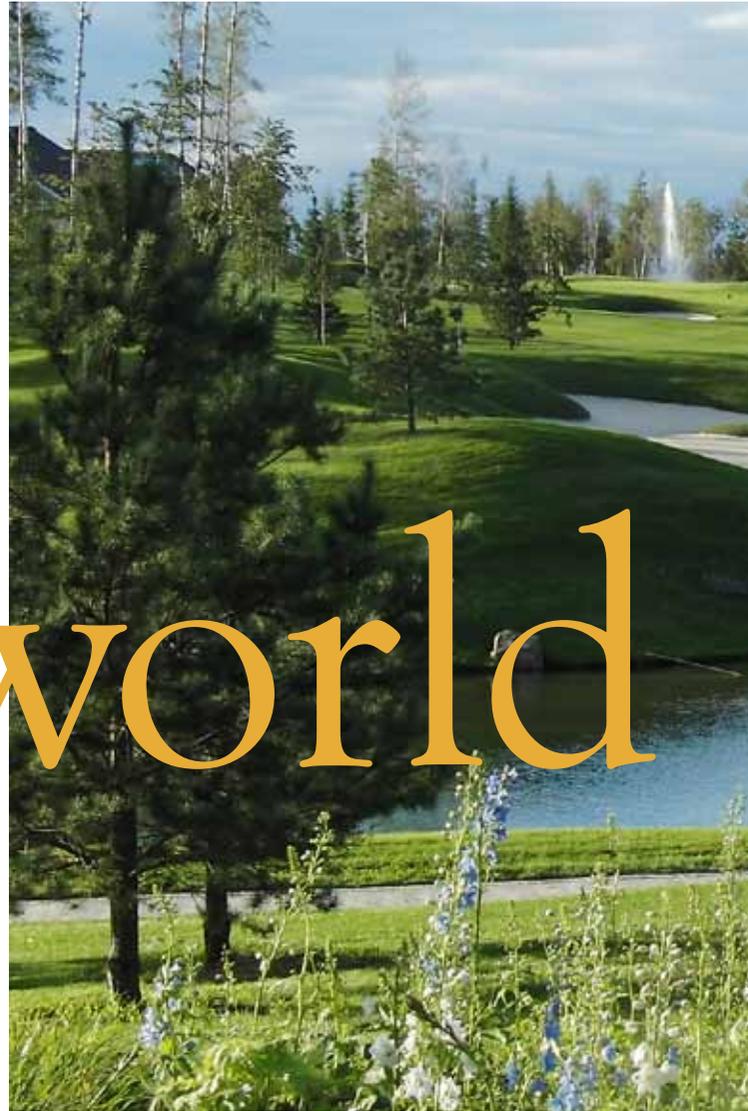
Recycled water in Texas

A Texas golf course located on a US naval base is switching from potable to recycled water using effluent from the base. The water was previously discharged into the Laguna Madre and ultimately into the Gulf of Mexico. Around \$2 million has been spent to transport the water to the golf course. The switch is expected to save the golf course around \$300,000 each year, and the city will also save money.

Tailor courses to women

Courses that tailor their facilities to appeal to women golfers will prosper, according to new research. Better financial results and quicker play are among the benefits, according to the study, commissioned by the Little Family Foundation. The survey says these best practices include four or more sets of tees, with the front tees under 4,500 yards, abundant directional signage on the course and the availability of childcare.

The new new world



Adam Lawrence takes a look at some of the countries that could be growth markets for golf development over the next few years

For the last few years, the golf development industry has been all in a spin about China. The explosive economic growth of the world's most populous country, in particular its booming property market, has seen golf architects and constructors beating a path to China and mixed golf and real estate developments springing up all across the country, but especially in the big cities of the east coast.

The rapid and uncontrolled pace of golf development in China, though, has caused concerns on a number of levels. Among investors and commentators, fear of a bubble—in both real estate and golf—has given rise to nerves about the sustainability of expansion, and the impact on food production from loss of farmland has

led the Chinese government to impose restrictions on golf construction across most of the country.

While noises coming out of China suggest that construction permits are now being issued again in some cases—and that a more all-encompassing 'golf policy', which many in the industry would welcome from an environmental and planning perspective, may not be too far away—these issues have led some in the golf development industry to look beyond China to other new markets for the game. With good reason too, as golf is continuing its march across the world.

Golf generally comes to a new market in one of two ways. Sometimes, developers hit upon a country or a region as a good location for golf because of its attractions as a potential



Aglarov in Russia, designed by Cal Olson, ASGCA

tourist destination. Or, alternatively, as middle classes emerge and accrue more disposable income in growing economies, golf, and golf-related real estate projects, become attractive to newly successful people.

It's a myth to suggest that the golf and real estate business model is somehow broken. Although in certain markets, mixed golf and housing projects may have been overbuilt, and thus few new ones are likely in the immediate future, the fact is that the model has been successful for decades, and in the right location will continue to be so. And emerging markets, carefully selected, are perfect for such projects: in countries or regions where a proportion of inhabitants are achieving prosperity for the first time, it's likely there will

be a shortage of desirable housing. Combine this with the known aspirational nature of golf, and you have a recipe for success.

Back in 2001, Goldman Sachs economist Jim O'Neill published an influential research paper on the prospects for what he terms the BRICs—the emerging economies of Brazil, Russia, India and China. Eleven years on and those countries have all seen tremendous growth. China in particular has become the powerhouse of much global growth, but the speed of development in the other three has been impressive.

Last year, O'Neill published a follow-up report, in which he analyzed the progress of the BRICs nations since his original paper, and pointed out what he thought

would be the growth powerhouses of the next decade. China, he noted, was now the world's second largest economy, and Brazil, with 2010 GDP of \$2.1 trillion, had overtaken Italy to take seventh place in the same table. A third of all global growth between 2001-2011 came from the BRICs, equivalent to the creation of another Japan and a new Germany, all in one decade. And, although exporting to the traditional developed markets played a big part in this growth, domestic consumption—obviously crucial from the perspective of the golf business—was picking up speed. "China is no longer just a low-cost labor phenomenon," O'Neill wrote. "Its people are rapidly rising up the income ladder and spending."

Given these stats, it is hardly



surprising that golf has begun to take hold in some of these dynamic economies. In fact, perhaps the real surprise is that we have not seen more golf growth in some of them. China we all know about, and golf is expanding rapidly in India too, but in Brazil and Russia it has been slower to take hold. But the signs are that the game, and its associated development opportunities, will become more important in these, and other emerging markets, in the years to come.

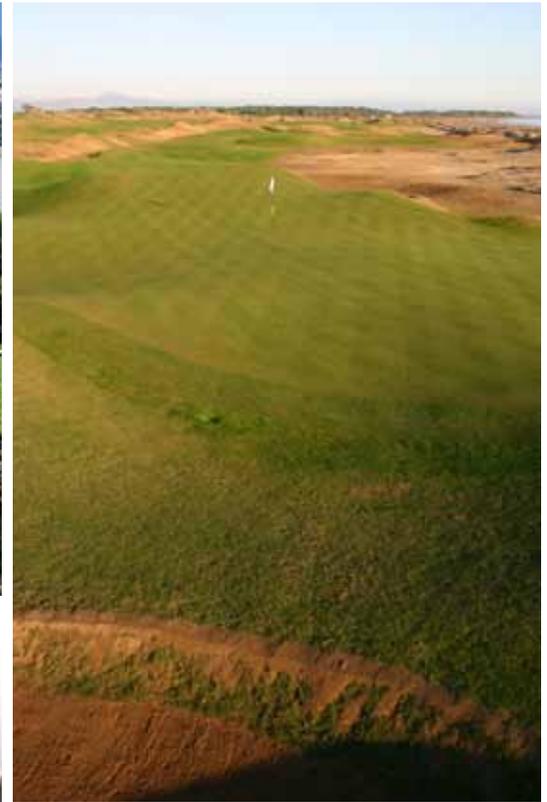
O'Neill's thesis is that in the

future, much of global growth will be fuelled by the BRIC nations, but also by a group of other emerging economies. Together, he terms them the 'Growth 8'; as well as the BRICs, he includes Mexico, Indonesia, South Korea and Turkey. All eight nations, O'Neill says, cannot now be called emerging markets—they are too far on, with "largely sound government debt and deficit positions, robust trading networks and huge numbers of people all moving steadily up the economic ladder." During the 2011-2020 period, he says, the change in

GDP in the Growth 8 is likely to be twice that of the G7 nations. Other emerging economies, he says, could potentially join this group.

What does all this economics mean for golf? We know that, as people become more affluent, they look for new ways to relax, and they seek out a better living environment for their families. In countries where rapid growth means the urban environment is densely populated, sometimes polluted, and hectic, this is a perfect recipe for the spread of golf-related lifestyle developments.

“It's a myth to suggest that the golf and real estate business model is somehow broken



Clockwise from left: Turtle Dunes, Mexico, by Tripp Davis, ASGCA; Amanali, Mexico, by Brian Curley, ASGCA and Grant Haserot, ASGCA, Lykia Links, Turkey, by Perry Dye, ASGCA, and Nine Bridges in Korea, by David Dale, ASGCA

In O'Neill's Growth 8 countries, this trend is already being seen, to different levels. China we all know about, but in India, though the high cost and difficulty of acquiring large parcels of land is acting as a brake, such projects are moving ahead. Outside India's IT capital, Bangalore, the Champions Reef development, whose golf course has been designed by Golfplan, the practice run by ASGCA members David Dale and Kevin Ramsey, along with firm founder Ron Fream, is bringing high end living to one of the country's most dynamic cities.

Russia's climate is hardly ideal for golf, but here too, there are signs that the country's new wealthy have an appetite for the game, and for golf living. ASGCA Past President Robert Trent Jones Jr built the country's first course, Moscow Country Club, some years ago, but new developments

are springing up, including the impressive Aglarov club and estate, with a golf course designed by Cal Olson, ASGCA.

Golf has been established for many years in Brazil, and, of course, the recent competition over the course that will host the 2016 Olympic golf events has kept the game at the forefront. Brazil's enormous tourist industry, both domestic and international, is playing an important role in the development of golf in the country too—the Costa do Sauipe course, designed by Brian Costello, ASGCA, is part of a huge resort near the city of Salvador. But there is residential golf here too; Costello also built the Fazenda da Grama course as part of a prestige estate close to São Paulo.

Elsewhere in the Growth 8, golf of course has major presences already in South Korea, Indonesia and

Mexico, and has in the last few years become an important generator of tourist revenue in the Turkish region of Antalya-Belek, where the Lykia Links course, designed by Perry Dye, ASGCA, has received a lot of attention. In Korea, of course, the game has become deeply embedded in the local culture, and the success of Korean golfers on the professional stage has given the country global prominence as a golf hotbed. For countries like Mexico and Turkey, whose golf business has been built largely on tourism, the question is whether the local population will increasingly come to seek out the game and its associated lifestyle opportunities. We can predict with a fair degree of confidence that they will, and that ASGCA member architects will be at the forefront of the development of their facilities. ●

“He brought so much to public golf as he wanted to create courses that people could really play

Mark Mungeam

Geoffrey Cornish: an icon remembered



ASGCA Fellow
Geoffrey Cornish
died in February at
the age of 97.

By Design pays
tribute, with a little
help from some of
his many friends

Geoffrey Cornish, ASGCA Past President and Fellow, and the last surviving direct link to golf architecture’s pre-war Golden Age, died on 10 February at the age of 97, at his home in Amherst, Massachusetts.

Cornish, who got his start in the golf business working for Stanley Thompson—there is an iconic photo of him as a young man with the large crew that built Highlands Links in Cape Breton—later moved to New England, and left an indelible mark on the region’s golf community. Architects such as Brian Silva and Mark Mungeam, for many years his partners, got their start with him, and countless golfers first learned the game on one of his courses.

Cornish, a native of Winnipeg in Canada, designed more golf courses in New England than anyone. He and his associates designed 240 golf courses in the United States, Canada and Europe, including the International Golf Club, Bolton, Mass.; the Center Valley Club, Center Valley, Pa.; and the New Ashburn Golf Club, Halifax, Nova Scotia. He continued to serve until

his death with Mungeam Cornish Golf Design.

Cornish wrote many books, including the landmark reference work *The Architects of Golf*, with Ron Whitten, who, on hearing the news of his death, reflected: “I’m still not as old as Geoff was when we started our first book together. I guess I thought he’d last forever.” For years, Cornish presented to groups around the world on the history and practice of golf course architecture.

He received his bachelor’s degree in agronomy from the University of British Columbia and his Master’s, as well as an honorary doctorate from the University of Massachusetts. Cornish was introduced to golf course architecture in 1935 when evaluating soils for Capilano Golf Club, then under construction by Stanley Thompson in West Vancouver. Cornish soon joined Thompson for training and four years later became greenkeeper at St Charles Country Club in Winnipeg.

Cornish served overseas with the Canadian Army during World War II, but rejoined Thompson in 1946. He left for a five-year association with



A young Cornish (on right wearing necktie) with the construction crew at Highlands Links and (above) during his service in the Canadian Army

pioneer turfgrass scientist Lawrence Dickinson at the University of Massachusetts before opening his own practice in 1952 in Amherst.

Cornish joined the American Society of Golf Course Architects in 1967. He served as ASGCA president in 1975-76 and was a past recipient of the ASGCA Donald Ross Award and the Golf Course Superintendents Association of America Distinguished Service Award. He is a member of the Canadian Golf Hall of Fame.

His long-term business partner Mark Mungeam, ASGCA, said: "I was honored to work with Mr Cornish. He was a true gentleman and wealth of knowledge on golf design and golf in general. He brought so much to public golf as he wanted to create courses that people could really play. Golf, especially in New England, would not be the same without him. Everyone who ever worked with Mr Cornish knew how he would walk and study a golf course. He would show up for an 8am meeting at six and walk the golf course, carefully assessing the layout before the meeting even began."

ASGCA Past President Dr Michael Hurdzan was co-chair with Cornish of

the society's History Committee. He said of his friend: "Geoffrey Cornish, Bob Graves and Jack Kidwell were as close to saintly men as possible, so for ASGCA to have them as members and past presidents was a blessing. They never spoke ill of anyone or anything, they were true friends to whomever they met, and they gave the game of golf and the profession of golf course design a refined dignity. Geoffrey Cornish was the 'Dean' of that group, and he leaves behind a long legacy of great golf courses and golf course designers that he mentored. Geoff was a special man by every and any measure, and every day spent with him was a treasured memory. He will be missed."

Former ASGCA Executive Secretary Paul Fullmer said: "Geoff was my 'go to' man when I joined the Society in the Seventies, providing me with information that wasn't written down anywhere and sharing his vast knowledge of the history of golf that soon stamped him as 'Golf's American Historian', a role he played for many, many years, speaking before groups throughout the US and his beloved native Canada."

Current ASGCA President Rick Phelps summed up Cornish's life and contribution. "Mr Cornish was a true gentleman and exemplified the highest traditions of ASGCA and the game of golf," he said. "His exceptional work as a golf course architect, author and lecturer cannot be overstated. Mr. Cornish's contributions to the profession of golf course architecture and the golf industry will live on for generations."

By Design's sister publication *Golf Course Architecture* was fortunate enough to conduct Cornish's last detailed interview, two years ago. Reporter Anthony Pioppi described him as 'a bit frail', but said 'The Cornish mind is still sharp and his wit remains'. As did his appetite for life: he took Pioppi out to lunch, with which he consumed two martinis! A teacher all his life, he knew the value of that work. "I guess teaching is the noblest calling of them all," he told Pioppi. ●

Geoffrey St John Cornish, 6 August 1914-10 February 2012. Read Cornish's last interview on the Golf Course Architecture website.

Soil Monitoring

Keeping superintendents informed

LedgeRock superintendent Alan Fitzgerald says the use of a wireless soil sensor system has been crucial to keeping his greens pristine in tough conditions

LedgeRock Golf Club, near Reading, Pennsylvania was designed to recreate the essence of a classic, old style golf course by preserving the scenic beauty and rustic nature of its original setting. Carefully crafted to fit seamlessly among the steep, forested hills, LedgeRock features over 300 feet of elevation change, and its spectacular topography provides long vistas of the surrounding countryside at every turn.

LedgeRock uses data obtained through a wireless soil sensor system to deal with greens that were retaining excessive moisture, affecting both their playability and long-term health.

“The system gives us a handy snapshot of exactly what’s going on under our greens, and that’s made a big difference in how we care for our turf,” says Alan Fitzgerald, who has been superintendent at the private eighteen hole course, designed by ASGCA Past President Rees Jones, since it opened in 2006. LedgeRock was built in an area of Pennsylvania

famous for rolling hills blanketed with dense hardwood forests, and the course was designed to blend in amongst the trees. However, that plan later created a problem no one had anticipated—some of LedgeRock’s greens were so close to the surrounding trees that they weren’t getting enough air.

“On a portion of our course, our greens couldn’t breathe,” Fitzgerald says. “There wasn’t enough natural air movement because they were too close to the tree line. Our bentgrass greens were suffocating.”

Without adequate air circulation, the greens were also retaining too much water. In addition to serious problems that can cause for the turf itself, the damp greens were physically uncomfortable for golfers. “It was like a sauna there,” Fitzgerald says “With a 40 percent moisture level on a hot day, the sun would make those greens steam.”

An obvious solution would be to remove or thin the nearby trees, but they’re not on LedgeRock property.



Something else had to be done quickly, so Fitzgerald turned to the team at his Toro distributor, Turf Equipment and Supply Company. The Turf Guard system was the ideal solution to measure LedgeRock’s subsurface moisture levels.

“We looked long and hard for a solution, and I really liked the concept presented by Toro,” says Fitzgerald. “I’m always interested in how new technology can make my job easier and my course better, and Turf Guard sounded like exactly what we needed.”

Fitzgerald presented his case to LedgeRock’s board members, who approved the installation on a test basis. Irrigation experts at Toro quickly arranged a demonstration by installing two of the underground sensors on one of the course’s problem greens.

In conjunction with the sensors, Fitzgerald also brought in a large portable fan and set it alongside the green. By forcing air to flow over the surface of the grass, the 60-inch fan was able to help dry out the green



Wireless soil moisture sensors allow LedgeRock's superintendent to improve playability and the long-term health of the course

and let it breathe, based on the data provided by the system.

The newly installed sensors immediately started measuring and sending data about moisture levels beneath the turf. As the fan continued to move air across the green, Fitzgerald could go to his computer and review the latest status of the drying-out process. Based on the readings sent from the sensors, he would know exactly how long to let the fan run.

Occasionally, after a stretch of rain-free days, the fan would actually start to dry out the green too much. When that happened, the system would alert the grounds crew to add water. Designed as a tool for optimizing irrigation, the system is equally effective whether it's identifying either too much or too little soil moisture.

Turf Guard, integrated with the Toro National Support Network for 24/7 customer assistance, demonstrates Toro's commitment to allowing superintendents to best manage all

the resources used on their course.

"Before we installed the Turf Guard sensors, we had to go out and check the green's moisture levels with a hand probe," Fitzgerald says. "Turf Guard made it a lot easier to keep an eye on what was happening in the soil on our problem greens."

Fitzgerald and the LedgeRock board were very pleased with the results of the demonstration, as the data allowed Fitzgerald to find the optimal solution to fix the wet greens. The sensors also offered a convenient way to accurately monitor soil moisture levels, and that enabled LedgeRock staff to make informed decisions about air flow and irrigation as needed.

Based on the success of that test, the club quickly added ten more sensors on other parts of the course with similar issues. That combination of precise moisture readings from Turf Guard and scheduled forced air from the fans gave LedgeRock the easy, cost-effective solution it needed to solve a major problem on the course. Golfers playing the course

appreciated the improved playability of the affected greens, and the positive feedback from the club's members and guests was tremendous.

"We've always known that certain issues facing a course, like crabgrass or grubs, are tied to soil temperature," Fitzgerald explains. "By using the data the system provides to monitor those temperatures, a superintendent could stay on top of a variety of issues before they became more serious."

The new system also helps to protect against threats such as excess salinity and fungus. If salt build-up in the soil is a problem, sensors tell superintendents when to flush the turf, and then post-flush verify when saline levels are lowered.

In addition, fungal diseases are often caused by excess soil moisture, so the system can alert superintendents when conditions are favorable for infections. "I'm sure there are many other applications around my course for Turf Guard," says Fitzgerald. "I wish I had more time to experiment with it and discover new uses." ●

Environment | Marc Whitney

From refinery to golf course

A former oil refinery in Wyoming is now home to a community facility including golf course, nature park and jogging trails

Through pump and treat remediation methods, a former oil refinery in Wyoming has found use as a 340-acre multi-use site featuring a golf course, business park, jogging track and nature park. The project was nearly 15 years in the making while the Wyoming Department of Environmental Quality worked with the landowner BP, the City of Casper and Natrona County to identify an environmentally-safe reuse of the land. The land Three Crowns is built on is still owned by BP, but is leased to the BP/Amoco Reuse Agreement Joint Powers Board for 99 years at the cost of \$1. The public is welcome to play the course, and it has become a recreational amenity for the people of Casper.

The business of refining oil goes back nearly 100 years in Casper, Wyoming, when the Midwest Oil Refinery was opened in 1912 to take advantage of the region's oil reserves. This era ended in 1991 when the Amoco Oil Refinery halted operations at the 340-acre site that at one time pumped and refined 48,000 barrels of oil a day. Almost immediately, the question of what to do with the site was an issue facing the people of Casper, Natrona County and the owners of the land, Amoco Oil Company. After nearly 15 years of planning, clean-up and golf design and construction, Three Crowns Golf Course, named after the petroleum grading system formerly used by Standard Oil, opened.

In 1998, a Consent Decree

was signed with the Wyoming Department of Environmental Quality. This decree gave the parties interested in the former refinery a framework by which to collaborate and identify the appropriate remedies and corrective actions for the cleanup of the property. The corporation worked with the entire Casper community to come up with a plan for the land, which, through a Reuse Agreement, stipulated that reuse and remediation be consistent with the full protection of the public health and environment. Also in 1998, BP Products North America merged with Amoco and became involved with the project. Called Platte River Commons, the project now houses the Three Crowns Golf Course, designed by Bruce Charlton, ASGCA Past President, which sits atop the site.

Prior to construction of the golf



Marc Whitney

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The 340 acre refinery site in Casper was transformed by the golf course project

course, the site was excavated, capped with fill and topped with 10-15 inches of sand. BP installed a remediation system, a series of about 100 reclamation wells (and four of the eight water hazards on the golf course) under the land that would eventually be the site of the golf course. These wells collect contaminated groundwater, which is subsequently pumped through a series of vessels that contain materials designed to absorb the water's contaminants.

The reclaimed water is supplied to a local lake and wetland area to encourage wetland growth, as specified by the remediation agreement. Once the remediation

system was installed (at a cost to BP of about \$178 million), the irrigation system was laid above the pumps and wells. The golf course builder worked carefully with the owner and design team to construct a golf course without any adverse impact to the remediation of the site while constructing a golf course to meet the requirements of the project.

Now that the layout is open, BP's onsite crew comes to the golf course early in the morning, prior to any golfers' arrival, and conducts routine maintenance to the wells and pumps in cooperation with the golf course superintendent's staff. If major repairs need to be made, the crews

work together to avoid damaging the irrigation system.

The course hosted 15,000 rounds its first year of operation in 2005. It plays at 7,065 yards from the back tees and features 45 acres of native grass and 110 acres of playable turf. Crested wheatgrass and fescues comprise the majority of the native grass, and occasionally metal parts from the old operation poke through the natural roughs. ●

This article is adapted from a case study in ASGCA's book 'An Environmental Approach to Golf Course Design', which is available for download from the Society's website.

“ The corporation worked with the entire Casper community to come up with a plan for the land

ASGCA at 65 | Mike Hurdzan

A proud past, and prepared for the future

Dustin Johnson never considered the spot where his tee shot landed on the final hole of the 2010 PGA Championship to be a bunker, but Pete Dye, ASGCA did. To make flat fields look like linksland and create Whistling Straits' Straits Course, Dye's design scattered bunkers around the new landforms. Nearly 1,000 bunkers, to be more precise; including the patch of sandy ground under Johnson's feet that was his undoing when he grounded his club—a penalty that kept him out of a playoff.

When asked if Johnson's situation might lead to changes at the course Dye said in trademark style: "I think it needs more bunkers!"

Besides providing an unfortunate occurrence for Johnson, the 2010 PGA shone new light on golf course architects. The work of a golf course architect today is both an art and a science, continuing a legacy that reaches back more than a century and a half to the days of Old Tom Morris.

The members of the American Society of Golf Course Architects (ASGCA) not only design and remodel the great majority of golf courses in the United States and have branched out worldwide, but also seek to preserve the traditions of their craft. And members produce these challenging and interesting layouts while enhancing each course's unique environment.

Since the early 1900s, when Donald Ross started laying out the courses at Pinehurst, the profession of golf course architecture has blossomed in the United States. But it wasn't until 1947 that 14 golf course architects gathered in Pinehurst for their first official meeting.

Over the years, ASGCA has grown in stature and increased its commitment

to golf architecture and the health of the game. ASGCA has encouraged a growing intelligence of golf design and development, and create resources to help developers produce environmentally safe projects.

The romantic conception of a golf architect is a distinguished-looking gentleman strolling through a meadow dropping a series of stakes into the ground as he walks. If only it were that easy! The reality is more complicated than ever. Unlike the early days, golfers are no longer just adult men. Now they're likely to include men and women, low and high handicappers, seniors and youngsters and even physically handicapped persons.

ASGCA members design courses with multiple teeing areas that welcome higher handicap players as well as provide conditions which comply with the Americans with Disabilities Act. Past President Alice Dye was the first to champion two sets of tees for women and produced a huge wall chart to guide golf courses in adding them correctly.

ASGCA members are working with clients to design and renovate courses that are shorter and less expensive to construct and maintain. "Courses measuring 7,500 yards are played to that length by one percent of golfers," says Tom Clark, ASGCA. "Something closer to 6,800 yards from the tips and 4,800-6,200 yards is good for 95 percent."

Members are committed to promoting the 'Value of the Golf Course', demonstrating the benefits provided to individuals and communities. Members' efforts have shown the value a golf course has for everything it touches: people, environment, wildlife, community, local economy and more. ASGCA has seen firsthand how courses

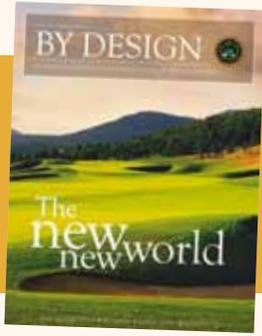
benefit communities at environmental, social and financial levels. From courses designed with storm water retention in mind, protecting surrounding homes and businesses, to the economic impact provided by jobs, taxes, tourism and more, what would be the negative impact if the golf course was not there?

As golf course designs have evolved over the decades, so have the requirements of the profession. Robert Trent Jones—a founding ASGCA member—studied agronomy, civil engineering, soil sciences, public speaking, landscape design, all areas important then and critical now. As golf and golf course design has grown and expanded into new territories over the past 65 years, ASGCA's commitment to professionalism, ethics, and outstanding design has enabled members to meet new demands. It is a commitment which will continue as the values of the original members are passed down to successive generations of ASGCA members and sponsors. ●



Dr Michael Hurdzan

Mike Hurdzan, ASGCA is a partner in the firm Hurdzan/Fry Environmental Golf Design. He is also co-chairman of the ASGCA History Committee, which he chairs with Gil Hanse, ASGCA.



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THE ASGCA FOUNDATION

SUPPORTING RESEARCH AND EDUCATION IN GOLF COURSE ARCHITECTURE

The ASGCA Foundation, established in 1974, has always had as its mission to advance the research of golf courses and their design, and to disseminate that information to individuals and communities interested in planning greenspace for recreational purposes. That mission resonates today and is pursued through three main activities:

PUBLISHING

The ASGCA Foundation is dedicated to publishing books and pamphlets that educate about golf course architecture's positive effect on golf's playing fields. Examples include "Golf Has Never Failed Me," which included writings by ASGCA Founding Member and Honorary First President Donald Ross, and "An Environmental Approach to Golf Course Development," which has gone through three editions and informed thousands of permitting panels and green committees on sustainable golf development.

The Foundation considers publishing works by and about ASGCA members, on topics relevant to golf course development, golf course architecture history and the practice of golf course architecture. Books and brochures must have an educational emphasis which helps developers and those involved in renovations of golf courses plan layouts that are enjoyable, sustainable and accessible.

INNOVATION RESEARCH

Each design of a golf course is different; though they typically consist of nine or 18 holes, the topography, environmental conditions, amount of land and target player all affect how the course will look and play.

What can be done during the design or redesign process to increase player enjoyment, help time-crunched players play more golf in less time or reduce the operating cost of a course? The ASGCA Foundation will consider research projects that study these questions. The goal is to share with the golf industry ideas backed by solid research that positively influence the health of the game and its playing field.

A grant proposal process is being developed to help researchers appeal to the ASGCA Foundation for research funding.

FUNDING "GROW THE GAME" INITIATIVES

The golf industry is made up of entities that address different aspects of the game: player development, facility development, facility maintenance, golf course design and construction and more. Until recently, each entity worked on its own to influence the health of the game. But many of these entities realized that pooling resources increases funding power and influence.

The ASGCA Foundation is committed to working with its fellow Allied Associations of Golf to pool resources and positively impact policy and public opinion regarding the game of golf.

HOW CAN YOU HELP?

The ASGCA Foundation solicits funding from ASGCA members, from interested individuals, from foundations that support the game of golf and from industry partners interested in furthering education and research in golf course architecture.

The ASGCA Foundation is a 501(c)(3) organization, and contributions are deductible to the extent allowed by law. Consult with your tax planner for more information.

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