



# **SCHWEPPE'S ABBEY WELL FUTURE OF SWIMMING REPORT**

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**In Association With  
The Future Laboratory**



## Foreword

As part of the Coca-Cola sponsorship of the Olympic Games, Schweppes Abbey Well will be one of the drinks offered at London 2012. During the Olympic Games, fans and athletes alike will be able to enjoy a range of drinks, including soft drinks, juices and sports drinks, as well as free tap water provided by the London Organising Committee.

At Coca-Cola Great Britain, we are committed to promoting active lifestyles, and in keeping with the London 2012 legacy vision to help get Britain active, Schweppes Abbey Well is introducing a year-round promotion, starting now, offering free access to swimming pools across the country. Every promotional Schweppes Abbey Well bottle cap can be exchanged for a free swim every Monday (excluding Bank Holidays) until 2<sup>nd</sup> February 2010 at participating pools at hundreds of locations. Over 250 pools across England, Scotland and Wales are already on board and our aim is to have at least 350 by 1st April 2009. Full details will be made available at [www.getbritainswimming.com](http://www.getbritainswimming.com)

Additionally, for every free swim redeemed, we will donate £1 to projects to encourage people to get active, and are committing a minimum level of investment of £50,000 (\$72.5k, €53k at current exchange rates) over the next 12 months. We are working to identify suitable projects to support that will assist our goal of getting Britain swimming on the road to 2012.

With this legacy in mind, we wanted to give our consumers to opportunity to find out what the swimming experience might look like in the future. Working together with our friends at The Future Laboratory, we have looked at every aspect of the swimming experience and how that might evolve in the next 20 years.

We hope the promotion, and this fascinating report which shows what an exciting future the sport has, will encourage everyone to rediscover the joys of swimming and all its resulting health benefits.

Enjoy the report and get swimming!

Cathryn Sleight  
Marketing Director, Coca-Cola Great Britain



## Introduction

Watersports are in the spotlight. Over half of the gold medals Team GB received at the Beijing Olympics (15 out of 27) were from the water-related sports of swimming, rowing and sailing. Now, a set of new initiatives and investment plans promise to fuel interest even further. The government has pledged to offer free swimming lessons to everyone under 16 and over 60 by 2012. And just a few weeks ago, British Gas announced that it will be investing £15m (\$21.8m, €16m at current exchange rates) on renovating local pools and encouraging grass roots swimming participation with schemes like Learn to Swim and Swimfit.

So the nation is ready for the plunge. Now, 'Schweppes Abbey Well' has commissioned The Future Laboratory to research the Future of Swimming report to show just how engaging, relevant, innovative and pivotal swimming is going to be in the future.

Today, swimming is the country's second biggest participation sport with 12 million regular swimmers. As Rob Woodhouse, former Australian Olympic swimmer and Rebecca Adlington's agent, says, 'People are not only getting healthier, they are learning more about their bodies too. They're increasingly turning to swimming because it's a no impact sport and it can be fun too.'

In the future however, the sport is going to extend its reach to whole new audiences who are drawn into it for reasons far beyond fitness. Tomorrow's swimming will also be about gaming, wildlife protection, therapy, alternative sensory perception, flood prevention, facing the elements, body analysis and pushing forward the very possibilities of human performance.

Here, we have talked to leading experts in the field; David Davies, double Olympic medal winner; Rob Woodhouse, former Australian Olympic swimmer and leading UK sports agent; futurologist and founder of Futurizon, Ian Pearson; Mark Haslam, swim co-ordinator for DC Leisure, the UK's largest operator in the leisure industry; Diego Gronda, managing and creative director of the Rockwell Group Europe; Andrew Logan, manager of sports science at British Swimming; Todd Huffman, neuroscientist; Ralph Riley, CEO of Zoggs who specialise in swimming equipment; Mandy Mason, business team manager of the Amateur Swimming Association; Helen Beckett, marketing manager for the annual Leisure Industry Week show; and Dr Scott Drawer, head of research and innovation at UK Sport.

Their insights point to a whole new world of swimming, which is innovating in line with advances in technology, an increased awareness of the environment and a willingness to try the new. These forces are coming together now and over the coming decade to transform the sport, and pools in general, into something quite different from what we understand it to be today.

Firstly, we look at swimmer futures, breaking this down into five major trends:

**Underwater Fantasy:** This is very much focused on how technology is transforming water into the next medium to conquer. By lacing it with digital imaging, swimming and gaming will gain a whole new dimension.



**Accelerated Learning:** Self-improvement is the mantra of our times and in this trend, advanced technology turns the daily swim into a precisely catalogued exercise, promising to transform casual swimmers into pros in record time.

**Super Swimmers:** The ‘transhumans’ are coming. We can’t expect gadget mania to stop at the handheld device so in the future, our bodies too will be temples to nano and bio technology, promising a future where swimming for several hours deep underwater without oxygen is as common as taking a long country walk.

**The Swim Pod:** Who said you needed water to enjoy the feeling and benefits of swimming? In the future, such physical limitations will be unimaginable as augmented reality, motion sensors and haptic technology (technology that interfaces with the user through the sense of touch) allow us to virtually experience just about any activity, even swimming.

**Submersion Living:** As the world beyond our bodies becomes a carnival of stimulation, there will also be a counter-culture where people will look deeper and deeper within themselves to feel emotion and be sensitised. People will use water and play with their senses as a path to this inner connectedness.

In the second chapter, we look at the future of swimming pools and again, we break this down into five trends:

**Eau Naturel:** Awareness of climate change and fear about the degradation of the planet is encouraging society to be more understanding of the natural world. They want to feel in touch with it and like to swim in natural pools. Additionally, the need to live in harmony with wildlife and the UK’s rising sea levels is going to make water a much more significant feature in all our lives. Forget the local fountain - civic space in the future will be about large, hydroelectric, natural pools for the whole community to enjoy.

**Hitting the wall:** Today’s pool designs make us think about hard walls, corners and angles ... none of which are particularly calming. In the future, the pool surface is going to be transformed so that we are no longer fearful of bashing into it. Soft edges, invisible walls and racetrack-shaped pools are going to make the pool experience seamless, soothing and will even find us playing and interacting with the walls.

**Aqua gyms:** Imagine taking equipment from the gym and submerging it in water. Suddenly, all those activities benefit from new degrees of resistance and the reassurance that any moves carried out will be low-impact. It makes perfect sense which is why the idea of aqua exercise is really taking off on the continent.

**Smart cubicles:** Everyone who goes for a swim needs to spend time in the changing area. It’s usually quite a bore. But in the future, these spaces will be multimedia Meccas, with body scans, ‘before’ and ‘after’ shots and heat detection lasers. In short, it will be like getting a digital health/fitness check whenever you go for a swim. What better way to stay motivated and on track with the training?



Riding the waves: Developments in wave technology are not only bringing the thrill of ocean waves inland, but they are doing it in absolutely minute spaces so you don't need to have a giant pool to get a wave. This trend shows how extreme waves can be delivered in as little as a two-metre by three-metre tank.

## **SWIMMER FUTURES**

Already, the British audience is growing accustomed to the animated and the computerised. Recent research from Childwise in the UK shows that one in six 5-16-year-olds spend more than three hours a day online and as many as 38% take their games console to bed with them. By being constantly switched on, the boundary between the on and offline worlds is growing increasingly blurred. It's becoming standard for the real world to be digitally enhanced in some form, be it via a movie watched on your iPhone, to music on your headphones or a flirty Bluetooth message from the guy across the room. And sports, in this case swimming, are going to shift in line with this trend too.

As the outside world is turning into something that we can customise (digitally and visually) to suit our needs, the home too is becoming a sanctuary. It is somewhere that is not only benefiting from the advancement and affordability of technology, (global demand for plasma screens is set to double by 2012), but it is also a place people are choosing to spend more time in. Financial worries and the desire for more intimate unique experiences are putting home entertainment at the top of the list. In a recent PricewaterhouseCoopers poll asking consumers what would be first choice if they were forced to cut spending, takeaways, fast food (14%) and eating out (11%) came top. Only half of the respondents would reduce their grocery purchases so cooking at home and enjoying the home space is still seen as essential. Here we see how these drivers will manifest themselves in five trends for future swimming.

### **1: Underwater fantasy**

Think about how much we love exploring new virtual landscapes in computer games ... in the future, this experience is going to be a whole lot more sensory as we will actually be submersed in the game, swimming through the digital terrain. Gaming will no longer be something that is frowned upon as being bad for health or anti-social. Already motion sensitive controllers have revolutionised how we understand gaming and in the future, with digital goggles, the interaction is going to be even more full-bodied, fun and, most importantly, beneficial to health.

#### **Digital Goggles**

Today, the goggles we wear to swim just protect our eyes from the water; in the future, they will also feature screen technology so that swimmers can recreate whatever kind of experience they want to have underwater. If you want to swim through Australia's coral reef so be it, or how about swimming through the Charles Kingsley's classic Victorian tale, *The Water Babies* and having a chat with Mrs. Doasyouwouldbedoneby or Mrs. Bedonebyyoudid.



Already, personal media viewers from Vuzix and Myvu are in production for those who want to bring the digital content they watch closer to them - the leap from this to hi-tech waterproof lenses really won't take long. 'These kinds of video goggles will come in the next few years,' says futurologist Ian Pearson, 'and we can expect a rapid take-up because it's quite natural to wear swimming goggles under water.'

Pearson goes on to explain how these could be linked up with sound to deliver a full-on audio-visual underwater experience. 'Waterproof MP3 players are already being used by swimmers who find swimming to the beat can take away from the monotony of doing lengths,' says Mark Haslam swim co-ordinator for DC Leisure, the UK's largest operator in the leisure industry. In the future, swimmers will not only have the music on their Dolphin Waterproof MP3 or the Speedo Aquabeat to distract them, they will also be gaming. Currently, computer games such as Grand Theft Auto feature water in their virtual worlds and now the gamer will actually be in that part of the game.

They won't be entirely immersed in it though. Instead, the swimmer will be able to see other bodies in the pool and know not to bump into the pool wall - even this will be incorporated into the game. Using positioning technology, the system will detect where the walls or other swimmers are and just turn them into sharks, barbed wire or even icebergs to avoid. Just imagine how much more fun those 20 lengths will feel when, rather than just moving in time with the music, you are also swimming away from police boats or trying to avoid being attacked by helicopters circulating above.

#### Swimming with virtual dolphins

These goggles won't only be used to recreate the rush that gamers crave. The same goggles can be used to deliver therapeutic benefits too. While many would love to swim with dolphins for example, the logistics of keeping live dolphins in a man-made pool are complicated, costly and of course ethically dubious. So what's the solution? Why not deliver that same experience but use virtual dolphins instead?

And here, it's not only about seeing the dolphin. 'You need to be able to touch the dolphin too,' says Diego Gronda, managing and creative director of the Rockwell Group Europe. 'This kind of therapy is really about engaging all the senses.'

With advances in haptic technology, marrying these digital goggles with feedback body suits is not so far away. Already, researchers from Carnegie Mellon University's Robotics Institute have made a device, the Mag-Lev Mega-Mouse, that allows people to receive tactile feedback from virtual objects on the screen, so you can feel something that previously we could only see.

Elsewhere, haptic gloves are being developed which contain electronic wiring that stimulate a sensation on the skin together with images that are seen on the screen thus mimicking actual contact.

Wearable vests are also being developed, such as gaming vests manufactured by TN Games, or the 'internet pyjamas' developed at the National University of Singapore's Mixed Reality Lab. By using haptic technology, they can literally prod the body and



stimulate the senses. The technology is advancing very quickly and it won't be long before these suits are a standard accompaniment for viewing virtual worlds and digital images.

## **2: Accelerated learning**

Future technology is also going to advance swimmers to professional levels in record time whether they are in an Olympic training or amateur environment. Already the number of swimming lessons being taken is on the rise. 'Today, there is a real push to learn how to swim and improve technique at all levels,' says double Olympic medal winner David Davies. 'People are keen to develop that skill and they are interested in improving their ability too.'

### Real-time teaching

By having cameras along the floor and sides of the pool (aspects of which are already used in professional training), footage of the swimmer will be fed back to their digital goggles in real-time, offering them a stroke-by-stroke, perhaps side-on view, of their technique as they do it. 'The advantage here,' says Pearson, 'is that you don't have to get out of the water to then view how you did after the swim.' Instead, the information is fed to the swimmer instantaneously.

'The idea of real-time feedback for athletes would definitely be something worth looking at,' says Andrew Logan, manager of sports science at British Swimming, who admits that today's methods are less than adequate. Today, while professional swimmers are able to watch a video of their performance, this is either done after the swim or displayed on an LCD screen which is wheeled alongside the pool's edge on a trolley. Not only is the equipment less than satisfactory, the image is transmitted at a delay too.

'By watching it in real-time, you would quickly be able to spot your mistakes,' says Pearson. Not only could these goggles be used to show the swimming form, like the head-on dashboard in a car, they would also feature health indicators such as heart rate and show a speedometer. 'Once we have better tools like this,' says Scott Drawer, head of research and innovation at UK Sport, 'we'll be much better informed and be able to devise optimal training programmes.'

Which, as Pearson explains, means accelerated learning for all – this isn't just for the Olympic pros. He says, 'This is the kind of technology that will start off at the Olympic level, but will trickle down for use in standard pools too.' Swimmers will love this high-tech approach to their swimming. Not only will it be like constantly looking in the mirror, perfect for the vain swimmer keen to check themselves out, the display could also be customised with a series of widgets, for example, how many kilometres have been swum, how many more to go, what temperature the water is at, how dehydrated they are. The swimmer will really feel like the helmsman guiding their high-tech ship.

### Resistant suits





One of the problems with swimming is the difference between what the coach tells you to do and what the swimmer actually does in the water.

In the future, swimmers will wear programmable body suits to counteract that and they will actually feel what is the right stroke action to take is. Smart fabrics, especially electro fabrics, will be used so that electronic voltages will be passed across the material, compressing it in some places and not in others so the coach will be able to show the correct stroke action. This will then be recorded into the computer and then transmitted to the electro body suit. When the swimmer wearing the suit follows the same action as the coach, it will feel smooth; if the swimmer tries to deviate from the coach's form, they will have to push against the material and it will be hard to do. The more they train in this way, the quicker those movements get registered in the swimmer's brain. It really will be the fast track for learning how to swim well.

'It will feel uncomfortable if your stroke follows the wrong path because there will be resistance there,' says Pearson. 'It will be as simple as programming the correct move into the computer and then saving it.' says Pearson, who goes on to explain that there are already quite a lot of these kinds of fabrics around. Whereas today's controversy over new hi-tech swim suits is about shaving a fraction of a second from the athlete's time, these networked body suits will take off minutes at a time.

It's a natural progression. 'Every sport looks to how it can develop its equipment,' says David Davies, who remarks the shift that has taken place over the last few decades. 'It's amazing what swimmers are wearing today compared to 20 years ago.' Just think what kind of progress will take place over the next 20.

### **3: Super swimmers**

Advances in prosthetics have already allowed South African sprinter Oscar Pistorius to compete alongside able-bodied sprinters in the Olympics; now he just needs to make the qualifying time. A double amputee, Pistorius has super-advanced prosthetic calves and feet that allow him to sprint at a speed that could be as fast as able-bodied athletes. As technology advances, Pistorius and others like him will benefit from even better prosthetics and the debate will be how to treat these athletes who will be outperforming the able-bodied competitors. The answer is the Super Olympics, a game that will be dramatically more entertaining than the able-bodied Olympics and will open up a whole new world of sport.

'We haven't reached the pinnacle of our knowledge,' says Scott Drawer, head of research and innovation at UK Sport. Looking to the future, he admits that, 'people can only get quicker.' And with the advances in prosthetics and nanotechnology, that is a definite.

#### **Flipping good**

Rather than having sprinting feet like those of Pistorius, swimmers of the future will have prosthetics that are designed specially for the water. Borrowing from other water-dwelling animals, future athletes will have flippers on their feet to aid movement through the water and may even have motors fitted to propel them faster.





Just as with the Oscar Pistorius case, advances in underwater prosthetics will change swimming forever too. ‘That’s how innovation occurs,’ says Drawer. ‘It’s usually about being faced with someone who is very different, who demands new laws to be written.’

### Electing for the upgrade

The question with these kinds of technological upgrades to the standard human form always centres around why someone would go to the lengths of having invasive surgery. But as the Oscar Pistorius case shows, these shifts happen incrementally. It could well start with an Olympic athlete and will only trickle down to the regular sports enthusiast as society, laws, ethics and culture shift in line.

If an Olympic swimmer loses the use of their knee through an accident, it would of course make perfect sense to try to restore that patient to their original state so they have the same functionality as before. As transhumanist and neuroscientist Todd Huffman, who has been experimenting with extending sensory perception through implants, explains, ‘I can envision athletes opting for radical surgery such as joint replacement or even elective amputation if they’ve damaged a body part to the point where they can no longer compete. Specialised prosthetics are advancing rapidly and at some point may represent enhancement over normally able athletes.’

Tiny motors in these prosthetics could also allow for faster movement through water and will be popular for professional and amateur swimmers. Huffman talks of early versions of this which have come out the robotic labs in Japan. ‘Whilst these early motorised limbs are very crude, it’s not hard to extrapolate where this technology will take us.’

### No-gills swimming

One of the biggest challenges in swimming is the fact that you have to come up for air. In the future however, this will no longer be a problem. Developments in the field of nanotechnology will allow the human body to use artificial red blood cells that can store 200 times more oxygen and carbon dioxide than today’s natural red blood cells.

This would mean that sprinters can run at top speed for 15 minutes without having to take a breath and, most excitingly for swimmers, it will allow them to stay underwater for as long as four hours.

These artificial cells are known as respirocytes and have been designed by Robert Freitas, who researches nanotechnology at the Institute for Molecular Manufacturing. He sees no reason why these tiny high pressure vessels won’t be in regular medical and recreational use by 2020 or 2030.

Nanomaterial applications such as those envisioned by Freitas could become commonplace in the mid-to-long-term futures of many of those alive today. The design is remarkably simple, powered by glucose. The realisation of the respirocyte is dependent on the increased miniaturisation in manufacturing, something which has already advanced at record speed over the last decade.



#### **4: Swim pod**

People have installed various exercise machines in their home gyms for some time, but swimming simulators have been slow to advance to the same degree of functionality. However, developments in augmented reality and motion-sensitive devices will change this in the future, allowing keen swimmers to enjoy the experience in the comfort and warmth of a dry swimming pod in their homes.

##### Couch-surfing

In the future, we will have virtual swimming couches at home that bring a whole new meaning to the term 'couch-surfing'. Homes will have a bench or couch set up in a special room and the swimming enthusiast will simply fix various supports to their limbs so the weightless feeling of being in water can be recreated. This would allow swimmers to have all the benefits of the water workout without the need for a drop of water.

'It would be a kind of swimming rig at home,' says Pearson, who imagines that developers could fuse the technology used in motion sensitive controllers along with virtual reality, digital goggles and feedback suits to deliver the full swimming sensation.

##### Virtual pool

The swimming pod will not only be used for fitness, but it will also be a form of home entertainment. With augmented reality delivered via 3D goggles, the couch surfer will be able to swim through whichever environment they want to. They could even swim and compete with friends who are swimming in their own pods.

By networking the pod via the internet, dry swimmers can feel as though they are sharing the same waters as their friends. It would also allow them to chart their virtual swims and the workout. There's a huge demand for this kind of intelligence within sport. Already technology, aimed at runners, uses GPS in trainers alongside their iPod to keep track of the distance that has been run and the speed. Runners can then view this via the website. They also socialise their data which allows them to compete with others in the community. Just as this opens up the opportunity for social networking around the sport of running, the swimming pod would do the same for swimming. As Pearson confirms, 'It would focus on the social side to swimming.'

#### **5: Submersion living**

For those who don't mind getting wet at home, future relaxation will take place in the home submersion tank. These only need to be 50cm in depth, just enough to enable the individual to be completely submerged in water. 'It would be the ultimate decompression,' says Diego Gronda of the Rockwell Group Europe, who believes that an evening in the submersion tank will replace other activities we currently use to unwind.

So rather than slumping in front of the sofa after a long day of work, you would slip on your weighted body suit and slide into your private pool. All that's needed is a

very simple breathing apparatus (not dissimilar to a hosepipe) that would connect you with the air beyond the pool.



### Deep sea movies

Once the submersion tank has been set up, there are all kinds of activities that could be done underwater to enhance the experience; one idea is to watch movies underwater. Something which Gronda and his innovation team at Rockwell group are looking into is creating a denser water to minimize the bubbles which would otherwise impair the viewing experience.

Specialist kinds of content would be developed that particularly lends itself to underwater viewing, such as movies actually filmed underwater. The medium could also be played with to enhance the experience, for example, the soundtrack could be delivered into the water acting like a subwoofer shaking it for an additional thrill. 'Imagine sitting on a comfy sofa, watching a movie but instead you are underwater,' says Gronda who is clearly very excited at the prospect.

### Dans le noir

The submersion tank can be about taking the senses away rather than adding stimulation to them, something which naturalist swimmers will be more inclined to go for. By shutting down the sense of vision, all the other senses in the body will be heightened. 'Once you are blindfolded or in complete darkness, the connection between your body and the water is enhanced,' says Gronda, 'It's a luxury that we don't ever have the chance to experience in our usual swimming routine.' This trend takes its lead from the restaurant Dans Le Noir, where diners eat in complete darkness so that they can taste the food better. Here, by plunging yourself into complete darkness underwater, other senses are made to work harder.

Suddenly, the decompression will be amplified as the sense of feeling and hearing are heightened. Swimmers will connect with the water and their own bodies and this form of aqua therapy will take off as a new form of meditation. Rather than simply relying on judging water by the way it looks, 'it will be about understanding the water through your skin and its sound,' says Gronda.

## **SWIMMING POOL FUTURES**

With sea levels set to rise by between 20 and 60 centimetres by 2100, large areas of the Norfolk Broads and the Thames estuary are likely to disappear. It's clear that water is going to be an increasingly important feature of British life and architects are now devising ways to adapt our towns to cope with this change. But instead of it being something to fear, these new approaches celebrate water as a great unifier that can bring health and wellbeing benefits to those of all ages.

This new respect for water is also part of our growing appreciation for the planet and maintaining the fine balance that mankind is currently destabilising. Getting closer to nature and swimming in open, chemical-free waters rather than man-made, chlorinated pools is a big part of this broader trend for ethical consumption.



With this call to nature in mind, pool design will have to fight hard to appeal to its audience. The future will see technology being used to turn the swimming pool and changing facilities into an engaging, sensory experience that will elicit an emotional response from swimmers. It won't be about jumping in, doing 20 minutes then getting out as fast as you can. Instead, it will be about taking time and making the most of what these playful pools will have to offer.

## **1: Eau Naturel**

This trend is about ecological responsibility. Flood-proofing tomorrow's pools will solve both problems and feed into the nation's growing desire for natural swimming. It's something which northern Europeans have already pioneered with Ecolonia in the Netherlands and Lindenthal in Leipzig, Germany, to name a few. Now, architects in the UK are taking this trend one step further.

### Open waters

Open water swimming is big as swimmers exchange the controlled conditions of public pools for the unknown in rivers, lakes and seas in the UK and beyond. 'These are hardcore people,' says former double Olympic medal winner David Davies, who himself is a keen open water swimmer, 'They like the challenge and love getting in the open water because it's about a whole new set of conditions that you have to face.' Swimmers often don wet suits to handle the extreme temperatures and are always at the mercy of the weather, be it sun, wind or rain.

The Great North Swim is the UK's biggest open water mass participation event with swimmers heading to Lake Windermere to take part for charity, competition and of course for fun. Now these enthusiasts are using their hobby as an excuse to get away on holiday too.

Swim Trek organise open water swim weekends to Europe's lakes and tarns (mountain lakes) where swimmers get to walk on the fells when they aren't in the water. Or how about swimming in the Thames, downriver from the Cotswolds to the capital? These swimming treks are now taking place in Scotland's Inner Hebrides, Egypt's Red Sea or even as far-flung as the Virgin Islands. 'It's turned into the new excuse to get away to these exotic locations,' says Rob Woodhouse. 'Not only do you get a holiday, you get to conquer these different oceans too.' This trend started with swimming the English Channel, but now there really is no limit. The world's oceans are there to be crossed.

### Civic pools

This trend is about creating a natural community swimming pool at the same time as devising a system to manage the effect of flooding. 'Rather than flooding being a disaster when it happens, it becomes a positive,' says Robert Barker, co-founder of Baca Architects. In their RIBA award-winning Life Project, they presented a range of ideas to improve the way city developments are planned and designed in flood risk areas, integrating sustainable design with ecological flood mitigation. With Baca Architect's designs, the urban landscape is transformed so it can both fill up with water if there is a flood and introduces water into the civic space. 'This is a massive plus,'



says Barker. 'It can be used by the community for play, exercise, wellbeing and professional sport.'

So just as Scandinavian towns are centred around a lake, Britain's developments will take this form too. What this offers is all the benefits of the completely natural environment, but with architectural interventions like a boardwalk so that swimmers can avoid the reeds and dive straight into the clear, natural water. There's no reason why the natural pool wouldn't be accessed via a building too, or even, as Barker suggests, a floating lido.

Maintaining the pool is simple too, as naturally occurring micro-organisms, plants and reeds are all used to clean and filter the water. This plant life will be tucked out of sight, but will be a great draw as it will negate the need for chemicals to keep the water fresh. These bio-engineered responses to the challenge of climate change are what the future holds and it's hoped that the Baca Architect Life Project designs for Hackbridge (in Sutton), Peterborough and Littlehampton will soon be implemented.

### Flowing in harmony

The future of pools will be about more than just recreational swimming and flood prevention. Architects are now looking at integrating these benefits with renewable energy sources and wetland conservation.

The Baca Architect's Littlehampton site consists of 2000 homes that will straddle a tidal pool used partly for swimming and recreation, and partly as a man-made conservation area of mud flats and salt marshes for the birdlife. In addition, a significant percentage of the energy demand from surrounding homes would be provided for by the tidal power. 'It's about providing an integrated solution,' says Barker, and it's these kinds of environmental solutions that will bring water closer to all our lives in the UK.

## 2: Hitting the wall

To compete with the move towards being outdoors and in nature, the traditional indoor pool is going to have to try harder than ever to draw the punters in. For this pool, designers are turning to the laws of the experience economy. These are principles that have been driving a shift in products and services so they appeal to an individual's senses and connect with them on an emotional level. It's a transition in the world of branding and design that has already been extended into the world of spas – and in the future, that same approach is going to reinvigorate the local swimming pool too. So just as spas have been turned into highly calming and sensitive places where the focus has been on lighting, using natural materials and attempting to offer a holistic, soothing and seamless experience, it's now time for swimming pools to benefit from that kind of facelift.

It's a development that is long overdue, says Diego Gronda of the Rockwell Group who are working on the Virgin Spa in New York and are currently developing a series of pool concepts for future leisure centres. 'Getting into a pool is like taking a driving test at the moment,' he says. 'The signs that signal water depth in metres and all the various poles that are at hand at the water's edge really detract from it being a sensual



experience.’ This is something the Rockwell Group and other leading architects such as Jean Nouvel architects, Baca Architects and Arup’s architecture firm PTW (responsible for the Water Cube in Beijing) are all attempting to do.

#### Water without barriers

‘Pools are like test tubes right now – you always have to go from one pool to another,’ says Rockwell’s Gronda of the way spa pools are divided between the various mineral waters and different temperatures. At each stage, you have to pull yourself out of one and then plunge yourself into another. What the Rockwell Group are working on is how to dissolve the boundaries so time in the water can feel more seamless and natural.

Using currents to create volumes or rooms of water, they want the swimmer to be able to move from one temperature or mineral composition to another without having to disrupt their experience by getting out of the water. ‘By having a variety of water types in one pool, the swimmer can move from one to the other and be surprised,’ says Gronda. ‘It’s good to have a bit of the unknown in there – life isn’t about having labels on everything.’

People like the challenge of the unknown. It’s one reason why swimmers are exchanging the indoor pool for open waters as described in the Eau Naturel trend. So Gronda’s idea of turning the very formatted experience of swimming in the local pool into something a little less predictable would definitely be a big hit.

Surprise and being challenged by the unknown holds a new premium in today’s information-rich society. Global position systems prevent us from getting lost; mobile internet can suggest which restaurants we should visit in a new area and even what dish should be ordered; sites like Twitter mean we always know what our friends are doing with their minute-by-minute updates; and services like Dopplr tell you where your friends are travelling and when are near turning the chance encounter into a distant memory. With this in mind, this idea of swimming without boundaries is going to be a big hit.

#### Playdough pools

But when the wall must be there, that surface is going to be given a whole new meaning. Just imagine a pool made from soft mouldable rubber instead of hard angular materials. Rather than avoiding the wall, swimmers will play with it, press their bodies into it and allow themselves to be fully enveloped.

Pools are typically built out of hard materials. ‘Typical pools materials such as cement, glass tiles or stone are very aggressive on the skin,’ says Gronda, who has set his team of engineers to work on the concept of creating a pool that doesn’t have hard edges. ‘It’s a big problem because it contributes to a sense of anxiety in the pool. There’s this latent fear that you will bash into the edge and hurt yourself,’ he says.



The Rockwell Group are currently working with 3M to produce the kind of rubber that you can submerge in water and which doesn't rot. This way, the pool could be more about soft curves and the edge would be an attraction in itself.

### Infinite pools

Another swimming pool convention that is going to be dispelled in the future is the idea that the swimming pool needs to be a rectangle tank. Just as running is done in a circular motion round a track, future pools will be designed in the same way too. Future swimming pool design will offer a continual swimming experience and take away the need to turn after every length. Not bouncing up and down the water's length will turn the 20-minute swim into an experience quite different from what people practise today.

'We are very interested in the psychological aspects of this,' says Rockwell's Gronda who is currently working on a racing track-like pool around four metres wide so whoever is swimming in it feels as though they are alone in the water. Gronda is also keen to feature images on the walls so this individual feels as though they are swimming through a landscape. This could be delivered digitally through LCD screen technology or projections. Swimmers would even be able to select what kind of landscape they want to be surrounded by. 'In essence, you would be in an infinite pool where you can swim forever,' Gronda explains.

### 3: Aqua gyms

And even when the pool maintains its traditional form, the equipment it is filled with will still render it unrecognisable. Our pools are going to start looking more like gyms as the trend in aqua exercise takes hold the way it is doing in other European countries like Germany. 'It's about moving away from the pool being about simply swimming up and down,' says Mark Haslam of DC Leisure. 'Pools are going to be more flexible than ever.'

### Aqua circuits

Just like in the gym, where different zones are for different exercises, swimming pools too will be divided up so swimmers move from one task to the next in a circuit training-esque set-up. 'This trend is absolutely huge in Europe,' says Ralph Riley, CEO of Zoggs who specialise in swimming equipment, 'and it's getting more and more specialised in terms of the equipment.' So we will start to see specific equipment in the pool for people to use and build their muscle resistance in a low-impact environment.

Aqua jogging for example is about running in motion but with added weights. Alternatively flotation devices are used to support certain muscle groups. 'Resistance equipment gets built into the pool,' says Riley, 'so it really starts to look like a gym.'

### Aqua coaches





There's also a new emphasis now on customer service within the pool environment so along with the rise in aqua exercise comes a new requirement from the lifeguards. Their role is shifting so it's not only about pool safety; it's also about helping the swimmers get the best workout. 'Lifeguards are being transformed into personal poolside trainers,' says Riley.

And it's not only for those keen on aquatic exercise. The shift from lifeguard to pool trainer is about revitalising the 20-minute session into something more varied and focused. Now companies such as Zoggs are offering training cards as a form of poolside support to encourage swimmers to try something different, perhaps replacing straightforward lengths with other exercises that use floats or resistance equipment in the pool to work specific muscle groups.

#### **4: Smart cubicles**

And the innovations don't stop at the pool. The changing area has also been the focus of much design attention. Imagine a future of personal dressing rooms where you get undressed and slip into the pool from your own private entrance with none of the discomfort of walking barefoot on the communal floor; or feeling self-conscious as you walk towards the water's edge in your swimsuit in front of all those looking on. 'The personal entrance would make it a much softer transition from what we have to endure today,' says Gronda. 'The swimmer could enter the water in privacy, get used to it and then swim into the main communal pool area.'

And this won't only be confined to luxury pools, as Mark Haslam, swim co-ordinator for DC Leisure, explains. 'There are huge advances coming through in changing room design,' he says. 'It's finally catching up with the standards that private facilities have been offering for so long.' And it doesn't stop there. Technology will deliver a whole set of facilities in the changing area that will help swimmers understand how their bodies are responding to the exercise and more.

#### **Deep tissue**

We already have devices that measure body mass index (BMI) but these will get more sophisticated over time. In the future, swimmers will be able to have a thermal check of their body before and after the swim to see where the body heat is and therefore learn which parts of the body are red-hot after swimming. Using infrared lasers, the swimmer will know exactly which muscles have been worked by being able to see which areas are hotter than the rest.

#### **Before and after**

There's nothing more satisfying than seeing the benefits of exercise or a diet. In the future, changing rooms will feature magic mirrors that will show you how your training is going, by allowing you to compare your look today with how you looked three months before.

'This kind of technology is actually quite straightforward,' says futurologist Ian Pearson, explaining that all that is needed is a simple video camera with a big display. Pearson imagines that this will either be fitted in the cubicle itself or it could even be



operated in the same way as photo booths work today. Just put your money in the slot and step into the booth to get an accurate ‘before’ and ‘after’ reading. ‘This kind of continual feedback into how well your routine is working is very important to people,’ Pearson concludes.

#### Power shower

Bodometric scanning is becoming huge not only in the medical and sports industry but also for custom-made fashion. ‘The shower room is an ideal spot to get a body scan done’ says Pearson. ‘Located in the middle of town, with shops nearby, it makes perfect sense that you would nip into the showers at the local sports centre to get your exact body measurements taken, before you head into town to order your custom-made wardrobe.’

This full laser body scan would also be a massive help with online shopping where people are reluctant to buy clothes because they can’t actually try the items on. With a digital file of your body, you could see just how well a garment would fit and whether it really does make your bum look big.

But sports scientists such as British Swimming’s Andrew Logan are excited about the technology for much less vain reasons. ‘At the moment, regular body measurements are done the old-fashioned way with callipers and a measuring tape,’ he says. ‘Just walking through a shower would be a really great solution for us who are working within professional training.’

Already, Pacific Northwest National Laboratory researchers have been at the forefront of developing innovative screening systems for body scanning and, according to Pearson, it really won’t be long before this kind of technology is available to the public.

### **5: Riding the waves**

Developments in wave technology are delivering innovative solutions to creating pools in small spaces. This is revolutionising the pool category because it means a pool no longer has to be designed along the principle of it being one body of water which must be shared with other swimmers.

#### Resistance pools

Resistance pools, such as those developed by Endless Pools, maximise space because rather than the swimmer going forward, an artificially produced wave motion brings the water to them. It’s like the swimming equivalent of a treadmill and it allows for tiny pools that are not much bigger than the size of the swimmer, say two metres by three metres. ‘It’s an alternative to going on a jogging machine,’ says Ralph Riley. ‘The feasibility is there and people are already at the installation stage.’

With the space needed being so economic, Riley imagines that they will be popular not only in gyms, where there could be as many as 30 in one building, but also in the home. ‘Just as the spa has developed as a very intimate, private experience, there’s no reason why this approach can’t take place with personal swimming pools in the gym



too,' explains Gronda. Clients would then book these pools by the hour. 'Swimming would no longer need to be viewed as a communal experience,' says Gronda.

### Vertical pools

This wave technology is also set to transform how we approach sports like surfing. In the future, surfing will no longer need to be done along the British coastline but instead in the comfort and convenience of the city centre.

A new project by Baca Architects, the Silvertown surf centre, will transform London's Docklands into a surfing hotspot, spearheading a new trend for what Baca's Robert Barker describes as 'yuppified surfing' - none of the inconvenience of travelling out of the city. There are also plans to heat the environment by a few degrees (extracting heat from the ice-climbing wall elsewhere in the centre) so the UK's harsh weather can also be tempered. 'The wave pool would be tiny,' explains Barker, 'just allowing two surfers to go at any one time.' But with a beach for swimming and sunbathing at the other end of the tank, the spot is going to be a primary destination for water-loving urbanites. And with giant lighting rigs over the surf, the experience promises to be wildly dramatic.