



Educating and Training
Swimming Pool and
Hot Tub Engineers

October 2023 Vol. 34 No. 3

NEWS

The Importance of
Backwashing

Phosphates

Seminar
Themes



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who you gonna call?

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So if you've got gremlins to sort out or for any technical queries, call these guys on **01271 378 100**.

From the Editor

I was pleased to hear some positive feedback as a result of the newly-designed ISPE Magazine front cover and ISPE Seminar Programme. Many thanks to those who got in touch.

In this issue we feature some interesting projects and both company and product news. As I have said many times, this is a free service for all ISPE members and their companies, and an excellent opportunity to shine the industry spotlight on your business activities and show your fellow 800 ISPE members what you and your company are doing.

The next issue of the ISPE Magazine (ISPE News) will be out just before SPATEX 2024 and the deadline date for articles is Thursday 21st December, so do get in touch.

Before then we have the next ISPE Seminar (see page 32) and don't miss the items on The 2023 ISPE Filtration Workshop on page 16, or the ISPE Back-to-Basics/Revision Seminar on page 13. There's also a note about the 2024 ISPE Exams on page 18.

Right now, we are just putting the finishing touches to the ISPE programme of Workshops at SPATEX 2024 (Tuesday 6th to Thursday 8th February 2024) at the Coventry Building Society Arena. The programme is packed with new presentations and again should provide something of interest to everyone in the pool and spa trade.

For all of you who are on the spa/hot tub side of the trade - we need you! Do let us know if you would like to contribute an article to the ISPE Magazine or give a seminar or workshop presentation.

By the time the next issue appears, Christmas will be over and SPATEX will be upon us, with the next ISPE Seminar just beyond. Exciting times!

In the meantime, keep busy!

Ross Alcock June 2023.

The ISPE Council of Management

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NOTICE TO ALL READERS

Articles and advice in the ISPE Magazine are for guidance only. Further professional advice should always be sought before acting upon, or refraining from acting upon, a course of action. Health & Safety is of paramount importance and the correct PPE (personal protective equipment) should always be utilised before undertaking any job.

If in doubt, ASK!

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WATER TREATMENT FOR LIFE

Front Cover Pool Project

Aqua Platinum Projects: Redefining Luxury Living in Chelsea's Premier Residence

In the heart of London's esteemed Chelsea District, a paradigm of luxury living has emerged. The exceptional residential development is the spotlight for Aqua Platinum Projects' latest opus. The allure of this endeavour extends far beneath the surface, where Aqua Platinum has breathed life into an underground utopia, transforming the concept of luxury living.



Aqua Platinum Projects, a renowned company in the realm of luxury swimming pool designs, are swimming pool design and build specialists, offering a unique approach and first-class service throughout Southern England, London, and Cheshire. Recognised as *Pool Contractor of the Year 2022*, serves not only as an accolade, but as a testament to their unwavering

commitment to the artistry of creating aquatic masterpieces.

This latest project tasked to Aqua Platinum features a 25-metre swimming pool, and a vitality pool with stainless-steel neck cannons, powerful back massagers and curved benches. The high-end specification deck-level pool includes lane demarcation to help the resident swimmers to define their lanes whilst swimming, gold-coated stainless-steel handrails, and ladders into the pool.

The subterranean sanctuary also encompasses a steam room adorned with large format granite tiles and a bespoke sauna offering an enchanting view of the tranquil pool. These amenities are thoughtfully complemented by



experience showers, a fully equipped gymnasium and studios, treatments rooms, 24-hour concierge, cinema rooms, games room, and even a virtual golf suite.

To manage the magnitude of this enterprise, state-of-the-art filtration systems operate from two dedicated plant rooms, assuring impeccable water quality in both the pools and the vitality room. Energy

efficiency is a paramount concern, and this is achieved through the incorporation of the latest plant equipment. The diligent team from Aqua Platinum Servicing conducts weekly maintenance visits to ensure that the amenities remain in an optimal state and that the water remains crystal clear.

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The Aqua Platinum experience extends beyond the realm of the pool with a one-piece spa by Aqua Platinum's sister company, ONE by Aqua Platinum. This spa is an embodiment of ingenuity, featuring three sets of floor jets, wall jets, and overhead neck massagers, all adjustable to cater to individual preferences. Elevated to impart an exclusive atmosphere, it accommodates up to three individuals and boasts customisable hydrotherapy jets and a state-of-the-art filtration system that sets it apart from conventional options.



The ONE spa is meticulously designed to offer a spectrum of hydrotherapy experiences, ranging from gentle massages to invigorating pulsations, ensuring its appeal to a diverse range of users. Its calming palette of grey tones contributes to a serene and tranquil ambience that beckons relaxation and conviviality. Furthermore, its expedited installation process offers substantial time and cost savings for clients, rendering it a pragmatic yet lavish choice.

The accolades for this extraordinary spa extend beyond the realm of aesthetics and functionality. It has garnered a prestigious nomination for the coveted *UK Pool and Spa Awards in 2023*, a testament to its exceptional design and functionality.

Find out more about pools by Aqua Platinum: aquaplatinumprojects.co.uk

*Find out more about the one-piece spa by ONE at Aqua Platinum:
onepoolbyaquaplatinum.co.uk*

New Members and Students

We extend a very warm welcome to all those who have recently joined or re-joined the Institute. If you have a colleague who would like more information on the ISPE and its activities, please email ross@ispe.co.uk or telephone 01603 499959 for more details.

Aylott, B.	Falcon Pools Ltd.
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Boulton, J.	Tommicks Ltd.
Casbierd, L.	Alan Bettin Swimming Pools Ltd.
Chapman, A.	Chaplin and Churchill's Ltd.
Coombs, S.	Devon Pool and Spa Company
Devall, L.	Rio Pool Construction Co. Ltd.
Donohoe, P.	AstralPool UK Ltd.
Edwards-Daem, B.	Peters Pool Care
Geisa, D.	Thorneybay Park Ltd.
Hughes, A.	Mermaid Swimming Pools Ltd.
Jacob, A.	Lighthouse Pools Ltd.
Jerez Lara, J.A.	Spain
Knight, R.	Alan Bettin Swimming Pools Ltd.
Leaman, A.	Alan Bettin Swimming Pools Ltd.
Matthews, J.	1066 Pools Ltd.
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Morgan, B.	Newport Live
Morris, P.	All Swim Ltd.
Nicholas, J.	Guncast Swimming Pools Ltd.
Richards, J.	Falcon Pools Ltd.
Roberts, L.D.	Falcon Pools Ltd.
Simonetti, C.	Alan Bettin Swimming Pools Ltd.
Stanghon, T.	Alan Bettin Swimming Pools Ltd.
Trevethan, P.	Falcon Pools Ltd.
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ISPE Set to Grandstand at SPATEX 2024

Whether you're a regular visitor to SPATEX or planning your first ever visit in February, there's a host of surprises instore at the 2024 show, from a new programme of ISPE workshops to the very latest innovations from the world's leading suppliers. With free attendance, SPATEX 2024, from Tuesday 6th to Thursday 8th February at the Coventry Building Society Arena, is not to be missed.



Against the backdrop of a very successful 2023 show, the build-up to the UK's only dedicated water leisure exhibition, SPATEX 2024, bears the promise of being a bumper edition. Exhibition space is almost sold out, in advance of the curtain rising in four months' time, and plans are well underway to make it the best in SPATEX's 28-year history.

The show's delighted Organiser, Michele Bridle, says: "Many of us are now behind computer screens for much of our working day but that makes occasions like SPATEX, with its opportunity to conduct business face-to-face, even more exciting and special. It's the one and only time in the calendar when the industry comes together under one roof for three days, to view the latest innovations, network, and do business."

So, aside from a showcase of products, what can you expect? ISPE will, of course, be out in force in Arena 1 with a new programme of workshops across the three days, providing CPD points and certificates of attendance to all attendees. SPATEX doesn't do things by halves! As is traditional, a parallel seminar programme will run in seminar Arena 2, once again featuring a diverse range of topics.



Display swimmers will once again be one of the 2024 highlights, having proved a major visitor attraction at this year's show. A synchronised swimmer, a rower and a counter current swimmer were put through their paces for the launch of the Swimming Teachers' Association 'Swim to the Beat' campaign which raised valuable funds throughout February for the British Heart Foundation.

Michele adds: "As the first international pool and spa exhibition in any calendar year, SPATEX is your window on all of the latest water leisure developments happening around the world. We look forward to welcoming you."

SAVE THE DATE!

SPATEX 2024 Tuesday 6th to Thursday 8th February. The Coventry Building Society Arena, Coventry CV6 6GE. For more information:
helen@spatex.co.uk Tel: +44 (0) 1264 358558.

The Importance of Backwashing

What is the purpose of a pool filter?

It is essentially the dustbin for the pool. Particulate matter that exists in the pool water should be caught within the filter media.

What happens if you don't empty the bin? You get bin juice, and nobody wants bin juice. The same applies to the pool filter. If we do not empty the debris that has been trapped, it will become a harbour for biofilm producing bacteria, increasing chlorine demand, resulting in poor water quality. Moreover, harmful chlorine by-products will form as the free chlorine reacts with ammonia given off by bacteria thriving within a biofilm.

To empty the pool dustbin, we need to carry out a 'backwash' of the filter. This is the process of reversing the flow of water through the bottom of the filter media to lift the trapped debris and release it to waste. The media type, shape and density will determine what velocity of water is required to eject the contaminants from within the media, for example, glass is less dense than sand, but to get the best results from a backwash, it is recommended to expand and 'fluidise' the media bed by at least 15%, preferably 20%.

UK guidance set by PWTAG (Pool Water Treatment Advisory Group) suggests that for sand with a grain size of 0.5 – 1.0mm a minimum 30m/h (30m³/h/m² in old money) has been effective for many years, when the reality is at a water

temperature of 30°C this will only expand the bed by about 6% as published in a bed expansion graph in the PWTAG book.

German DIN standards are highly regarded throughout Europe and recommend a velocity of double that to PWTAG at 55-65m/h. Advice should be sought from the supplier/manufacturer of the media being used to ensure the best results and that the bin is emptied on a regular occasion.

To achieve a 20% bed expansion in backwash, it's important to know what flowrate is required. All too often, I visit installations where a flow meter is missing. It would seem that the installation rarely matches that of the design, so how can we be sure that the system is operating to the design specification without a flow meter? I liken it to driving a car without a speedometer. You might think you're cruising at 60 miles an hour when you could actually be doing 70mph or 50mph!

Knowing the flow rate of a swimming pool is important for three reasons: 1. to ensure the water is turned over quickly enough to remove the pollution, largely introduced into the water from bathers from the pool and into the treatment system, in the designed time; 2. to ensure good filtration performance (to capture fine particles). If too fast, the media will not perform so well and smaller particles will pass through the media back to the pool; 3. To ensure media fluidisation during

backwash to empty the bin!
STOP GUESSING THE FLOW
AND INSTALL A FLOW METER!
Sorry, shouty bit over now!

Other considerations for good backwashing are the design of the filter vessel itself. If a filter is being sold as an 800mm dia. filter, make sure it is just that, 800mm diameter. The surface area of the media is really important, and this is not governed by the shell diameter of the filter vessel, but by the lateral or nozzle plate arrangement at the bottom of the filter vessel, the collector system. If the collector system does not reach out to the extremities of the inside shell of the filter vessel, then you have lost surface area. Water will take the shortest route through a filter; it will not turn corners. An 800mm diameter filter should have a surface area of 0.5m^2 . If the collector system only reaches out to 650mm then the surface area is greatly reduced to 0.33m^2 . A flow rate of $12.5\text{m}^3/\text{h}$ through a surface area of 0.5m^2 provides a filtration velocity of $25\text{m}/\text{h}$. Put the same flow $12.5\text{m}^3/\text{h}$ through 0.33m^2 of filter area and the filtration velocity increases to almost $40\text{m}/\text{h}$. Why pay for an 800mm dia. filter when you're only getting a 650mm dia. filter?

The above also effects backwash. On the extremities of the filter vessel where we have little water movement, we will have a large dead spot where bacteria will thrive. Even the best filter media in the world will struggle with a poorly designed filter vessel. Think of the filter vessel being the hardware and the media the software, you only

get the best out of your software with the best hardware!

Other considerations that affect flow and backwash efficiency are things like pipe dia. size and filter vessel bulk head connection size. I have seen many filters installed with small connections that will only allow a max. filtration velocity of $30\text{m}/\text{h}$. This is ok for filtration, but it will be difficult to backwash effectively especially if it were sand due to the density!

Our research at Dryden Aqua has shown that some glass media need a higher velocity than even sand, despite having a lower density. This is largely down to the size and shape of the grain. Some grains were very flat, slate like, so, during backwash, they flip up and drop back down into the water column.

So, to summarise, in order to achieve a good backwash, a good emptying of the bin, you need good hydraulics of the filter vessel including correct size bulk head connections, correct pipe diameters to allow flow, a flow meter, the correct backwash velocity and a well-engineered media of the correct size and shape that will not only capture particles to a very fine micron, but will also fluidise to at least 15% (preferably 20%) to release the particles to waste.

If you'd like to see our research first hand, please contact me at

Dryden Aqua:

jimmy@drydenaqua.co.uk

Tel: 07443547133.

This article is a summary of a presentation by Jimmy Lamb, FISPE at the 128th ISPE One-Day Seminar in March 2023.

The Blue Scoop

By Julian Mills, MISPE

We've all seen them, they come in chlorine granule containers and are an extremely useful tool if they are used correctly.

One hotel company even used to tell their staff members how big these scoops were, with a notice on their plant room doors. Notices like this help to cut down the chance of errors happening inside plant rooms, especially when used in conjunction with the correct chemical handling procedures and training of all team members who are allowed into the plant rooms.

PLANT ROOM CHEMICAL SAFETY

CHEMICAL	PURPOSE	COLOUR
Calcium hypochlorite	Hypochlorite for sanitising	Blue
Sodium bicarbonate	Increases alkalinity	Green
Calcium chloride	Reduces alkalinity	Red
Sodium carbonate - soda ash	Increases pH	White
Sodium bisulphate - dry acid	Reduces pH	Yellow
Sodium thiosulphate	Neutralises	Black

Colour coded scoops measure 500g. Blue HTH scoop measures 700g.

Colour coding/index applies to chemical containers, scoops and chemical information sheets.

WARNING - Plantroom contains carbon dioxide gas. Check detector before entry.

So, why am I writing this article? Probably because of the strange use that these scoops get used for!

We all remember the stacking cups that our children played with, well this carries on in a number of plant rooms where the staff are playing the same game with the blue scoops. The most I have ever seen in one plant room was 20 stacked up on top of each other, but they were obviously going to try and exceed this number because another stack had been started and was up to 12 already!

The scoop (as stated above) measures 700g, but how many do we see which are being used to measure out other chemicals, the most popular one being Sodium Bisulphate. I have been to a site which has 300 litre day tanks for both Sodium Hypochlorite and Sodium Bisulphate. The bund tanks were labelled up with the appropriate safety signage telling the operators what chemical they were to use inside the day tank, the appropriate safety clothing to use when handling the chemicals and also the dosing rate for the chemical.

So, I asked the team members "How do you fill the Sodium Bisulphate day

tank?" The reply came back "Well, we've been told to fill the tank up to the top and add 2 BLUE SCOOPS to the water".

"But the sign there says that you must add 10KG of the chemical to 100 litres of water. How much are you adding?" I replied.

"We don't know". Ok, lets do the maths. If the tank was completely empty and you filled it up to the 300-litre mark, how much chemical would you need to put in?" Out come the mobile phones. "We would need to add 30KG of the chemical". "Correct, how much are you adding when you use the blue scoop which has a measuring capacity of 700g?" Light bulb moment "1.4KG, is this why we can't control the pH levels in the pool and are always having to hand dose as the tank is always empty?" "When you hand-dose the water, do you then use a blue scoop to measure out how much you are putting in?"

"No, we use a paper coffee cup." "What, a different one each time?"

"No, the same one on all the chemicals that we add!"

This is an example that will be happening in a lot of pool plant rooms across the country. Substitute blue scoops with pint glasses, coffee cups, breakfast bowls etc., and that's how many clubs roll!

But the best example for the use of a blue scoop not in the manor for which it was intended that I have ever seen is the picture below.



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Product Focus

Keep Your Plastica Commercial Cover & Reel System in Top Condition with a Service Contract

Plastica Pools has seen a dramatic increase in quotes and uptake of their commercial cover and reel systems within the wet leisure industry over the last year. Driven by the need to make savings on energy consumption and be more environmentally efficient, many businesses are paying out now to reap the rewards of installing a heat retention cover and reel system on their pool. In fact, savings of up to 30% per annum can be made, based on our customers' typical results using our online energy saving calculator which can be found on our commercial pools website. A typical payback is usually less than 2 years, depending on usage.



In addition, Plastica now offer a choice of Contracts of Service from 1, 3 or 5 years at set pricing, to regularly inspect and maintain the performance of the systems. Timely repairs and replacements will minimise disruption to pool operations and allow businesses to maintain a reliable and attractive swimming facility for their

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customers. The main benefit of a service contract is to provide routine check-ups to identify any potential issues before they escalate into major problems.



Commercial sites are subject to regulations and industry standards to ensure the safety of their swimmers. A service contract helps ensure that the reel system complies with these safety standards. While service contracts involve a recurring cost, they can result in significant long-term cost savings for the owners. Regular maintenance will help prolong the lifespan of the reel system and businesses can save on operational costs, including heating, water treatment usage and water consumption.

When you invest in equipment, you want peace of mind, and Plastica's service

contract offers the holder priority service, minimising disruption to the pool opening times and keeps the facility running smoothly, which keeps customers satisfied.



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phone 01424 856500.
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The 2024 ISPE Back-to-Basics/Revision Seminar

Subject to demand, this seminar will be presented in February 2024, and is free of charge to all registered ISPE students, but open to all for a small charge. It is an ideal refresher session for those students about to sit their ISPE exams (Tuesday 19th March 2024) and looks at the four subjects in question, Filtration, Construction, Heating and Chemicals. The four ISPE Tutors will look at past exam questions and give tips and advice on how to approach the exams. Students attending this seminar do not have to sit the exams in March and those sitting the exams do not have to attend this seminar but many of those who have attended these seminars in recent years have subsequently passed their exams and said how useful the day was. Contact the ISPE office for more details and to reserve your place.

Product Focus

Buckingham Pools and Certikin - a class act



Tasked with constructing a new 20m by 8.5m swimming pool for the Astley Cooper School in Hertfordshire, the Buckingham Pools' sales and design team turned to its trusty supplier, Certikin, to supply the filtration, heating, and chemical dosing.

Completed in May, pupils and staff have been putting this impressive pool through its paces and have already awarded it top marks for the performance.

"The pool's shell construction proved challenging, coinciding with a really hot spell of weather and the team working in very humid conditions," says Richard Sharman of Buckingham Pools. "Working under a scaffold crash deck obstructed the pool entirely and proved a very confining exercise. A solid static water test and first-fix pipework followed before the rendering and screed stage. Our construction and engineering team rose to the challenge, to ensure the deadline was met and they even managed to complete the tiling and plant room ahead of schedule.

"Equipment was selected on the basis of performance and longevity. Our design team conduct a comprehensive product investigation to ensure commercial standards are met whilst verifying the suitability for the scale and complexity of each pool build. As it's the leading supplier of premium products, service, as well as customer support, we naturally turned to Certikin" says Rynoux Du Preez, the Sales Manager at Buckingham Pools. "With a demanding and complicated design and build project, such as this, working with the trusted UK market leader is of utmost importance."

Regardless of the aesthetic requirements of a pool, it is nothing without sparkling, clear water and that all comes down to the quality of the filtration. Buckingham Pools chose Certikin's SLX Bobbin Wound GRP Filtration. The SLX range of filters are the workhorse of a commercial pool and with a wide range, covering sizes from 1.05m through to 3.00m, and options for laterals and nozzles with various pressure ranges and accessories, any

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pool can be catered for. The standard SLX lateral version comes at 2.5 bar rating with commercial laser cut 50mm laterals making them robust for the commercial environment and all backed up with a 10-year warranty.



Certikin supplied a Euroswim Booster Pump - highly reliable for water circulation and filtering, it is also extremely quiet. The Euroswim series is available in three versions.

Buckingham Pools also turned to Certikin for its chemical dosing in

the shape of a complete FLOC or PAC dosing solution. FLOC, or Flocculant, is a liquid that is added into a pool improving the filter efficiency and, in turn, the water quality. FLOC works by bonding together small particles in the water making them much larger and easier to trap in the filtration system.



Buckingham Pools T: 01926 852351

www.buckinghampools.com

Certikin T: 01993 77200

www.certikin.co.uk

The 2023 ISPE Filtration Workshop

The next ISPE Filtration Workshop will take place on Tuesday 14th November 2023 at Plastipack's premises in St. Leonards-on-Sea, East Sussex, by kind permission of Peter Adlington, FISPE.

This Workshop, presented by Chris Carr, FISPE and Philip Barlow, FISPE, with assistance from Kim Mumford, MISPE, is ideal for new fitters or those who would like a bit of a refresher. Delegates get to strip down and re-build a pump and filter, under close supervision, and there are a number of theory sessions during the day, too, plus refreshments!

If you would like more details or to reserve your place, please contact the ISPE office (ross@ispe.co.uk or telephone 01603 499959). Numbers are strictly limited to sixteen, first-come, first-served, **so do get in touch now** if your are interested as, at the time of writing, only a few places remain.

Look at That!

ISPE Workshop Video Presentations

Around sixteen ISPE workshop presentations from SPATEX 2023 are now available to view, free of charge, on the ISPE website (www.ispe.co.uk). These add to the previously released presentations from the 'Virtual SPATEX' event from 2021, and are a great source of free information.

Look at This!

ISPE-Endorsed Pool Plant Operator Training - ISPE endorse the training provided by three companies. Please contact ISPE if you would like more details of the courses available.

Product Focus

Restoration of a Damaged 40-year Old Pool

Refurbishing a swimming pool that is long past its use-by date is as exciting a design project as building a new pool. In the case of this 40-year-old freeform pool the structure had suffered from movement and cracking because it had been left without water for many years in its later life. London Swimming Pool Company (LSPC) took on the challenge of restoring a pool that had quite a checkered past.



The pool refurbishment was part of a wider property refurbishment project in London.

The project required a high level of coordination with the main contractor and the pool owners to ensure that the pool refurbishment team could work around other work and keep to its pool completion date.



The LSPC team transformed the damaged pool structure into an impressive contemporary pool. The unique shape (14m at its longest point and 7m at its widest point), profile and variable depth of the pool shell (1m-2.5m) were a challenge in terms of establishing the position of the new fittings and features.

The extensive renovation included removing the mosaic tiles, rendering the pool and installing new pipework. The old fittings, for example, skimmers, inlets, vacuum, main drains and the pool lights, were replaced with stainless-steel alternatives. Instead of a tiled finish, the client chose an Alkorplan Touch Prestige pool liner from Aquaflex, a minimalist design that evokes a volcanic rock effect. The pool

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surround and patio were finished in Basalt tiling which complements the liner design.



The pool liner was cut to the pool's specification at the client's premises and fitted perfectly to create a stylish aesthetic. Apart from the convenience of on-site installation, the liner is ideal because it eliminates any leak potential from unknown issues with the existing pool structure (such as ground movement), is very low maintenance, for instance, there will be no need for re-grouting in the future and the liner comes with a 15-year warranty.

A new filtration and water chemistry system featuring the Bayrol Pool Manager dosing system were designed and installed in a newly built summer house/plant room. The pool is heated via the client's domestic boiler fed to a Bowman heat exchanger which was also supplied and installed by the LSPC team.

This ambitious refurbishment project is proof of what can be achieved with a very dilapidated pool – starting from scratch is not always the answer.

By working together on a shared vision and bringing great craftsmanship to the challenge, the damaged old pool has been restored to its former glory for the family and their friends to enjoy long into the future.



London Swimming Pool Company
www.londonswimmingpools.com

The 2024 ISPE Exams

The next ISPE Exams will take place on **Tuesday 19th March, 2024** at Cobham, Surrey.

All paid-up registered ISPE students will receive a letter with booking form in mid-January.

All places must be pre-booked so if you have not received your letter by 31st January, do get in touch.

No bookings or reservations will be taken before the letter is sent in January. All students are expected to sit all four exams unless re-sitting previously failed subjects.



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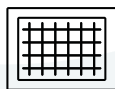
Heating



UV



Lighting

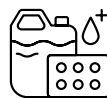


Cover

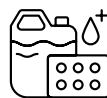
Key Features:

- Manual or timer control of pump, heating, lights, cover and UV
- Manual or automated dosing* to manage pH and ORP
- Monitoring and reporting of temperature, flow state, pressure*, pH* and ORP*
- 3 x additional open auxiliaries for additional feature control, such as swim jets, fountains, deck/surround lights etc
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- Amazon Alexa enabled
- Can coordinate equipment operation with weather forecasting for maximum efficiency
- Intuitive to use – easy to install and connect
- UK designed and manufactured

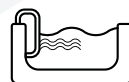
*additional equipment required **based on 300 hours when pump is operating



Dosing - acid



Dosing - chlorine



Swim jet*



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Works with Alexa

* Open AUX port which can be used to connect other equipment as required

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Product Focus

Save 90% of your Energy Costs

Saving Energy on a Heated Outdoor Pool: Using EnergyGuard™ Selective Transmission to Reduce Pool Costs

Plastipack Ltd, manufacturer of the award-winning, unique GeoBubble™ pool cover material, has released the results of their latest product testing.

With the continued increase in global energy prices, alongside growing environmental concerns, maintaining an energy efficient swimming pool has become more important than ever. With this in mind, Plastipack recently tested the effectiveness of its patented EnergyGuard™ Selective Transmission pool cover material in saving energy costs whilst being used in conjunction with a heat pump.

The testing took place at Plastipack's unique on-site testing facility, consisting of 5 identical pools in the South East of England, UK. One of these 8m x 4m pools was covered with a 500 micron EnergyGuard™ Selective Transmission cover, and the other left uncovered to act as a control. Both pools were heated using identical 12.5kWh heat pumps, which were on timers and set to 28°C.



Over the course of the 16 day test in August 2022, the cost of heating the uncovered pool was £65.62 (76.48 €), whereas the pool covered with EnergyGuard™ Selective Transmission cost just £5.64 (6.57 €)*, a saving of over 90%.

Read the full case study at <https://www.geobubblepoolcovers.com/wp-content/uploads/2023/06/using-egst-to-reduce-pool-costs-v3.pdf>

**These prices were calculated in accordance with Ofgem's Energy Price Cap in the UK, which was set at 34.0p/kWh (approximately 0.40 € cents) (at the time of publication ((February 2023) – <https://www.ofgem.gov.uk/publications/latest-energy-price-cap-announced-ofgem>*

What makes EnergyGuard™ Selective Transmission unique?

Launched in 2015, after years of testing and development in conjunction with the University of Surrey, EnergyGuard™ Selective Transmission is the first swimming pool cover material proven to increase solar gains while also inhibiting algae.

In the years since its launch, testimonials from happy pool owners have shown the efficiency of the material as a winter pool cover, with customers thrilled at how quick and easy it is to get their pools ready to open once the season starts again, thanks to the material's ability to inhibit algae.

In 2018, Plastipack's Research and Development team were awarded the Business Innovation Award from the Institute of Physics at a ceremony at The Houses

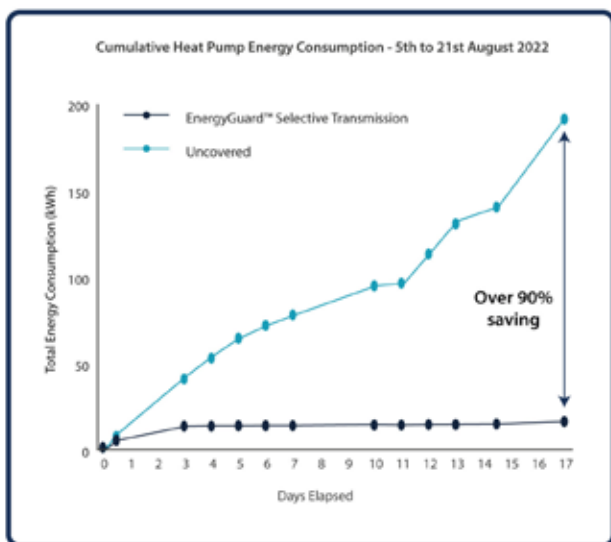


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of Parliament in London in recognition of the groundbreaking work that went into the development of this best-selling product.



EnergyGuard™ Selective Transmission is part of Plastipack's High Performance 'Guard' range of products, each developed to meet a particular need for pool owners. The other products in the range are:

Sol+Guard™ - This translucent pool cover material is designed for maximum solar gains.

CoolGuard™ Ultra – designed for pools in hotter climates, CoolGuard™ Ultra helps keep pool water cooler.

RaeGuard™ - the newest product in our range, RaeGuard™ is designed for maximum heat retention.

Find out more about the GeoBubble™ product range at: <https://www.geobubblepoolcovers.com/products>

Who is Plastipack Ltd?

Plastipack is a leading manufacturer of energy and resource saving products.

Plastipack was founded to meet a need in the swimming pool market for a supplier of quality material, offering reliable deliveries and good customer service. These needs have been embedded within Plastipack from day one and have fuelled our growth as a collaborative customer-focused supplier offering performance materials and consistently high quality standards.

As Plastipack has grown and developed we have led the innovation of the materials in design, longevity and performance. Our products are developed and tested through the efforts of our own inhouse Research and Development team and through collaborations with universities specialising in engineering and physics. This has resulted in innovations such as the patented GeoBubble™ Technology and award winning and patented EnergyGuard™ Selective Transmission material.

Read more at: www.plastipack.co.uk

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Company Focus

Certikin announces major sponsorship deal with new charity partner, Level Water

Certikin, the UK's leading manufacturer and supplier of water leisure equipment, has teamed up with Level Water, a swimming charity which supports young people with disabilities to access one-to-one swimming opportunities and start their Learn 2 Swim journey.



Level Water's mission is to secure time and training in a leisure centre/pool coupled with the provision of Level 2 swimming teachers for 1:1 lessons for children with disabilities. Once the facility is on-board, they use their database and Level Water's contacts within the local community to make them aware these specialised lessons are now available. If the young person meets the criteria, they are then passed to the centre/pool to book the lesson.

The time in the water is given free of charge and the cost of the lesson is split between the parents and Level Water, depending on individual circumstances. Fund-raising is used to support the cost of these lessons.

Certikin Marketing Manager, Chris Green, says: "We are thrilled

to partner with Level Water to help change the lives of young people who typically wouldn't have the opportunity to experience the huge health and safety benefit, not to mention the joy, of learning to swim.



"There is a lot of work to be done, both in securing funding and

A vertical advertisement for Aquaflex. The background is a blue and white grid pattern. The text is in various shades of blue and orange. At the top, it says "SUPPLYING THE TRADE" in large blue letters. Below that, "SOLAR COVERS" in smaller blue letters. Then "WINTER DEBRIS COVERS" in smaller blue letters. The brand name "AQUAFLEX" is in large, stylized blue letters with a wavy orange line underneath. Below that, "The UK's leading Liner specialists" in smaller blue letters. Then "PRE-TAILORED POOL LINERS" in bold blue letters. Then "ONSITE REINFORCED POOL LINERS" in bold blue letters. At the bottom, there are two lines of small text: "01722 326 673" and "INFO@AQUAFLEX.CO.UK" on the left, and "WWW.AQUAFLEX.CO.UK" on the right.

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in bringing wider recognition of the charity to swimming schools, leisure centres, and the like.”

“Prior to the pandemic Level Water were offering 20,000 lessons to 500 children in approximately 90 pools. Due to pool closures, 150 of these children are still waiting to access lessons and, in addition, there are a further 2,000 children on a waiting list.”

Certikin has already kick started its fundraising campaign via in-house staff activities. Its initial target is to raise £3,750 which will enable Level Water to provide 250 lessons (one lesson for one child costs around £15). Certikin, as a company, have agreed to match the money raised, thus doubling the number of lessons to 500.



Matthew Maguire who is Head of Programmes for the charity commented "Level Water are delighted to be working with Certikin and have the support of such a fantastic organisation. Our mission is to instil a lifelong love of water in every young person and ensure all children have the opportunity to learn to swim in a safe, inclusive and enjoyable environment. We are incredibly grateful for the fundraising efforts from Certikin, but equally excited about the possibility of growing our

partnership and being able to increase the number of young people benefiting from life changing swimming lessons.”

“There is a natural synergy between Certikin, our customers and Level Water,” adds Chris. “If you own, or operate, a wet leisure facility (large or small) please consider timetabling some free time in the pool for a disabled child to receive a lesson. If you’re a pool dealer, we urge you to join us in fundraising and supporting this worthy charity. Please do contact me, or the charity, if you require any further information.”

LEVEL WATER

Level Water www.levelwater.org

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Phosphates

By Richard Bishop, MISPE

Across the UK we are seeing phosphates make the headlines on a regular basis, including the increased release of raw untreated sewage into our water courses and coastline, and the longer term impact of legacy agro chemicals from over application making their way through the soils and into the river catchments. In my local region of Herefordshire, mass intensive poultry farming has led to phosphate levels in rivers reaching a critical point and damaging their fragile eco systems. The River Wye, once revered as the best salmon river in Wales and England, is rapidly becoming an open sewer.

A combination of reduced central government funding and the UK leaving the EU and their pan European oversight have led to a reduced level of inspections and

enforcement and sadly a dramatic increase on unregulated waste discharges of poultry manure disposal, raw sewage and increased farmland surface runoff taking with it the unnatural levels of phosphates and nitrates along with valuable top oil.

River Wye at Kerne Bridge near Ross on Wye

The River Wye winds its way to the sea through Wales into England and then back through Wales to release into the Severn Estuary near Chepstow. It delivers drinking water, supports one of the major agricultural regions in the country and provides millions in tourism revenue especially down the Wye Valley and Forest of Dean where it is estimated to generate nearly 300 million pounds in revenue.

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Its beauty was recorded by the artist J.M.W. Turner and the poet William Wordsworth.

Our local Herefordshire soils are premium grade 1 agricultural land so they do not need much enrichment

artificially but the local poultry producers do not wish to cover the cost to send the chicken manure to poor land out of the region or deal with it in new generation waste digesters due to increased costs. So the local soils have been overloaded, especially in the last 30 years, creating a legacy bank of phosphates that will leach into the catchment over the many decades to come.

In 2019, a policy was imposed called Nutrient Neutrality and applied by Natural England to localised areas where rivers needed urgent protection. To be clear, this is not a blanket policy across the whole of England but a targeted policy applied as protection to support specific areas that are already suffering from environmental decline and/or pollution.

Nutrient Neutrality (TIN186) - Natural England - Nutrient Neutrality Principles August 2022

"Nutrient Neutrality is a means of ensuring that a development plan or project does not add to existing nutrient burdens within catchments, so there is no net increase in nutrients as a result of the plan or project."



Image courtesy of local.gov.uk

The current UK government are seeking to reverse this sensitive river catchment protection with an amendment that will be debated in the House of Lords in the Autumn. In seeking to remove this protection it will also impact on the established policy of "polluter pays" or, in other words, you clean your own mess up. Most industries are governed by this, the majority of industry pays for industrial waste processing and removal, factored into their manufacturing profit and loss calculations.

Only recently we had to investigate to have aged, poor quality Calcium Hypochlorite removed from a hospital clients' hydrotherapy pool plant room. The cost quoted was several hundred pounds but the client had to pay to ensure safe and correct removal of the substandard chlorine.

How do Free Phosphates impact the pool industry, you may be asking. In simple terms if any new pool projects are proposed through planning in these protected nutrient neutrality zones you will need to show evidence of the impact the pool will have in not increasing phosphate discharges from the whole site. If not, then the planning application could be refused or at the very least held up. We are involved with two projects at the moment, one locally and one in Scotland, where Phosphates were mentioned.

So what are Free Phosphates?

Phosphates are building blocks of all cells and are found in plants and animals, so if we kill or break down algae in a pool, the algae breaks down to release phosphates, and when UV systems break down bacteria they also release phosphates.

Water authorities also deliberately add Phosphate to the mains water to help prevent the absorption of metals from the aged

lead, cast iron and copper pipe systems across the national network. Find out what the Phosphate loading is in the incoming mains water and record it as you do with Langelier water balance, and metal content of make up mains water. Maybe even test and record discharge Free Phosphate levels from backwash waste so you have information to pass to planning authorities in the future.

Why do we need to be aware of Free Phosphates?

They reduce the kill rate of sanitisers like Chlorine.

They can feed algae to help it grow faster and have the potential to create algae blooms.

Some water treatments contain Phosphates to help them work or are released when they are used in the pool water.

Calcium hypochlorite - anti scaling additives, such as the trade name Calgon, are Phosphate based. So maybe consider using Sodium Hypochlorite to remove this factor. **However always balance that decision with the suitability of the chlorine donor, with the water hardness and Langelier, in the region's make up mains water.**

Metal sequestrants and anti stain products to remove metals wrap up the Free Phosphate into **combined** Phosphate and then are filtered out of the pool water by the filter but remember they will inevitably be released into the waste services as part of the total Phosphate. **Combined** Phosphate cannot be used like Free Phosphate by algae to bloom, and local authorities focus on Free Phosphate testing only as a result.

The local authorities monitor Free phosphate levels as these are the ones that enable cellular growth, **Combined** phosphates cannot be

used by algae etc to generate more cells. When you add a metal sequestrant it wraps the Free Phosphate up into Total phosphate which the algae cannot access.

How to be proactive

If you come across clients or projects that could be delayed as a result of Phosphate issues in the region I would encourage you to have a Phosphate plan in advance. Demonstrate to the local planning authority that you understand the local concerns and you have a procedure to design and operate pools in a low impact manner. It is not a guarantee to ensure planning is approved, and in some cases planning will be refused regardless of how minimal the pool's discharge will be, but it will demonstrate that you are doing your very best to mitigate the potential impacts.

1. Keep pools cleaner and clear of leaves in skimmer / pump baskets - debris breaking down will release phosphates as they decay.
2. Pre-showering of bathers always helps.
3. Vacuum and brush regularly to remove phosphate sources from the pool and by brushing enables more effective algae control by brushing off its wax protection. This will lead to reduced chemical use to control the algae in the longer term also.
4. Filter as much as you can - next generation hyper filtration is a path to consider using the advanced glass medias on the market which can filter up to ten times finer than traditional silica sand. Removing more organic matter leads to less phosphates in the pool water.
5. Add a Phosphate removal treatment which wraps the Phosphate up into total phosphate, this does not remove the phosphate but does make it less likely for algae to be able to use it to

multiply and grow. Some floc. now have Phosphate built into the treatment so as you floc. you wrap up Free phosphate as well.

6. Filter at reduced filtration speeds - maybe it's time to consider abandoning high rate filtration and consider reducing the flow to $25\text{m}^3/\text{m}^2/\text{hr}$ which will trap far more dirt to a finer degree. The residential, more economic high rate filter tanks can still be used but operated at a slower speed to improve efficacy. Then backwash at a rate above $35\text{m}^3/\text{m}^2/\text{hr}$ as PWTAG advise. (I use a minimum of $40 - 45\text{m}^3/\text{m}^2/\text{hr}$ to ensure effective cleansing and rinsing.) We only design filter systems at below 25 rate now as our own standard. Of course having a good flow meter such as a 'FloVis' in the system should become the norm to ensure you have optimum filtration and backwash rinse cleansing rates present.

7. Check your chemicals - try to adopt chemical treatments which do not have phosphates in them or add to phosphate loads after use. Choice of sanitiser using a non-additive Calcium based Chlorine or liquid Sodium Hypochlorite in that region.

8. Use technology - Advanced UV and Ozone systems will minimise the chemical demands of a pool system - although by killing bacteria and algae they will of course release some phosphates into the water as a waste product.

9. Seek clarification from the local planning authority where the project is, as each area interprets the guidance in their own individual and often alternate ways. Be clear how it is applied in your region. In most cases when they understand that the pool is not drained annually as many authorities have written into their guidance, and that discharges are

typically 0.5 to 1m^3 per month, they consider the potential phosphate loadings to be minimal, similar in the way a waste water discharge permit application is used.

However remember that once that filter media is backwash rinse cleansed you are simply releasing it into the sewage system as waste. You are simply reducing the Free Phosphate levels within the closed circuit of the pool tank and pipe services by filtration and possible chemical phosphate treatments. Once discharged they are back into the water cycle.

For an excellent paper on Phosphates I would direct you to the technical paper presented by Mike Causer of Dryden Aqua - The Influence of Phosphates on Stability of Swimming Pool Systems - ISPE – October 2017.

We cannot predict or control what the politicians will decide in the medium term in the House of Lords and Parliament but, rest assured, Phosphates will be a topic of concern for years to come. So it would be good to be prepared and maybe PWTAG could carry out some research on Phosphate levels generated from swimming pools as this appears to be absent from the research.

Richard Bishop, MISPE -
www.aquathermae.co.uk

Situations Vacant

Normally, we like to include a summary of the latest Situations Vacant from the ISPE website, but lack of space, again, precludes that on this occasion.

For the latest vacancies, and there are plenty of them, see the Situations Vacant page of the ISPE website, www.ispe.co.uk or contact the ISPE office for more details.

The 129th ISPE Seminar and Seminar Themes

The next ISPE One-Day Seminar, our 129th, will be held in Cobham, Surrey, on Thursday 12th October, and will have a theme of Swimming Pool Construction. All ISPE members should have received a programme but these are available from the Diary Dates section of the ISPE website. All ISPE members and non-members are welcome to attend, although places MUST be pre-booked, please. All delegates receive a certificate of attendance indicating 4 CPD points. The closing date for bookings is Thursday 5th October, so do be quick!

The theme of the following ISPE Seminar, the 130th, will be Pool and Spa Finishes. This seminar will be held on Tuesday 21st November at a venue to be confirmed, but probably in Newbury, Berkshire. Details are still being planned but it is hoped that Philip Barlow, FISPE, will give an in-depth case study of fitting a liner to a pool. Will Dando, FISPE, will look at on-site lining and Jimmy Lamb, FISPE, and Colin Day, FISPE, will together look at the chemical effects on liners. It is hoped that other presentations might look at stainless steel, tiling and possibly adhesives. There are also plans to look at acrylic spas and overcoming problems of de-lamination. This is all in the planning stage and may change by the time the programme comes out! The reason for this is that when these things are planned, various names are suggested as being ideal people to give a presentation. In the event, often, people are unable to take part for a variety of reasons, so we all go back to the drawing board and start again (those named above have been approached and should be there though!) For more details, please contact the ISPE office.

The 131st ISPE One-Day Seminar will be held in March 2024, at a venue to be decided and it is hoped that the theme will be Spas and Hot Tubs. More details in due course.

At all ISPE Seminars there will always be ample opportunity for questions and answers and discussion amongst the delegates. The Institute provides a platform for the exchange of members' ideas, thoughts and experiences, so do let us have yours!

Remember, all ISPE Seminars are open to ISPE members and non-members. Also, If you are interested in giving a presentation or have a subject you would like to see presented, then do get in touch - ross@ispe.co.uk.



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