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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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From Your President

By Jimmy Lamb, FISPE

It's a great honour and privilege to become the President of ISPE and to once again be following in the footsteps of my late Father, John Lamb.



Jimmy Lamb, FISPE

Dad was president of ISPE back in 1992-94 and, it appears to me that not much has changed within the organisation a great deal since then.

I was at SPATEX last year when a young Andy Lester of GALA Swimming Pools bumped into me in the aisles. "Ah, hello Jimmy, where are PPG exhibiting then? I've not seen them yet" asked Andy. "I'm not here with PPG this year Andy, instead I'm supporting ISPE on their stand" was my reply. "Oh, you're retiring are you?" was the immediate retort from Andy. As you can imagine, this got me thinking, if this is the perception by the

younger generation of ISPE, then something clearly needs to change!

My objective during my two year tenure as president, is to try and make the Institute more appealing to the younger generation. There is an undoubted wealth of knowledge within the ISPE Council and the wider membership, but the future lies with the youth, and ISPE presents the perfect forum to help impart that knowledge. The ISPE Home Study Course is a great foundation for anyone new coming into the industry and was one of the first educational pathways that my Dad set me on when I joined BioLab UK Ltd. all those years ago. There is an array of further technical papers available covering all aspects of swimming pools from construction to chemistry and surveys to crack repairs. Although these publications might appear dated to some, they do contain some great information. We have already recruited some new 'younger' members to the ISPE Council and they are bringing some fresh new ideas of how the Institute can be 'modernised', so watch this space.

In the meantime, I'd like to thank all of our members for their continued support. We are always looking to the membership for ideas and help in how to move the Institute forward, and of course, to contribute to the ISPE seminars and ISPE Magazine articles and to share their knowledge.

Jimmy Lamb, FISPE

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SPATEX stands and delivers!



SPATEX 2023, the 26th edition of the annual water leisure exhibition, held late-Jan./early-Feb., did not disappoint! More than 1400 visitors from 23 countries flocked to the Coventry Building Society Arena and packed over a hundred stands, showcasing the latest innovations from the world's leading suppliers and manufacturers.

Over a third of visitors sampled the free ISPE Workshop and parallel seminar programme,

where energy saving and sustainability, along with the latest health and safety guidance, were hot topics.

Networking opportunities were plentiful and very well attended. The annual British Pool & Hot Tub Awards on the Tuesday evening was followed by the traditional after-show visitor and exhibitor themed SPATEX Networking Party on the Wednesday. Many delegates then



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enjoyed a special curry and artisan beer night in the local Dhillon's Brewery. Situated within minutes of the Coventry Building Society Arena, it proved a hugely popular event.

A large swim spa proved a major visitor attraction as a synchronised swimmer, a rower and a counter current swimmer were put through their paces for the launch of the Swimming Teachers' Association's 'Swim to the Beat' campaign, to raise valuable funds throughout February for the British Heart Foundation.



If the show's success is an industry barometer, then the forecast is set fair for a vibrant, busy pool season ahead.

Organiser, Michele Bridle joins the team in sending a heartfelt thank you to all exhibitors and visitors for making SPATEX 2023 the resounding success it was.

Spaflo: "We had a brilliant first day, with a steady flow of customers on the second and third days. We will definitely be back next year!"

Certikin: "Another great show delivered by Michele and the team and, as always, we saw a number of high-quality visitors. This year,

Certikin celebrates its 60th anniversary and it is fair to say that SPATEX has played an important part in its success. The show provides a platform for us to launch our new products for the upcoming season as well as being a fantastic opportunity to meet old and new customers alike."

One Stop Spas: "If you want to do anything in the industry, you need to be at SPATEX."

Swimming Teachers' Association (STA): "It was our pleasure to attend. The SPATEX team did an amazing job. I think it was my favourite one yet. It's the first year where I could have done with another day to catch up with people I missed."

Fairlocks: "A massive thank you to the SPATEX team for all your hard work in making it such a massive success for us. SPATEX is a vital part of our marketing campaign and when things go so well it makes all the effort and cost worthwhile."

SCP: "An incredibly dynamic event. The attendance and the atmosphere were identical to what you'd find at the Piscine Global Europe exhibition in Lyon."

Carropools: "This was the first time we exhibited in the UK. We were impressed by the high quality of the stands and products from co-exhibitors. We've gathered so many valuable insights, contacts with British pool builders and fun experiences that we've decided to return next year."

Heatstar: "As always we had a great time exhibiting at SPATEX and show casing our products. The show was well organised and we

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were pleased with the turnout and attendance onto our stand. We look forward to coming back in 2024.”

Book your stand now and save money: SPATEX's 27th edition returns **Tuesday February 6th to Thursday February 8th 2024** to the Coventry Building Society Arena. Book before **Wednesday May 31st** and take advantage of a generous Early Buy Rate.

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michele@spatex.co.uk
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ISPE Workshops at SPATEX - Video Presentations

In the coming weeks, around sixteen video recordings taken during SPATEX 2023 of the ISPE Workshop presentations will be made available for free viewing on the ISPE website (www.ispe.co.uk). These will join the pre-recorded presentations that are already there, produced from the 'Virtual SPATEX' ISPE Workshop presentations in 2021.



Will Dando, FISPE, delivers an ISPE Workshop presentation at SPATEX 2023

All these presentations, each of around 20-30 minutes duration, are an extremely useful resource for study and information, and we

would encourage anyone in the pool and spa trade to have a look at them.

The cost of producing these latest videos, at SPATEX 2023, was in excess of £2,200 and the ISPE applied to the 'SPATEX Foundation' for funding.

The SPATEX Foundation was set up to utilise some of the profits made from SPATEX to fund items and initiatives to benefit the wider industry. There are 4 main categories under which money may be claimed, and some examples are given below:

- TRAINING
- EDUCATION
- RESEARCH
- OTHER SUPPORT

The category of Training might be to develop a course, or to provide suitable materials that would benefit the industry, and the ISPE are grateful for the funding which has helped make these presentations available for the benefit of all.

Planning for the ISPE Programme of Workshops at SPATEX 2024 will start in earnest in July 2023, so if you are exhibiting at SPATEX 2024 (Tuesday 6th-Thursday 8th February, at the CBS Arena, Coventry, W. Midlands) and would like to give a generic presentation as part of the ISPE Workshop programme, do get in touch with us at the ISPE office to discuss your ideas.

The Institute would like to thank all the speakers who gave their time freely to deliver another successful ISPE Workshop programme during SPATEX 2023, attracting around 285 delegates.

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. Space precluded us from including our list of new members and students in the January issue so all those below have joined or re-joined the ISPE since September, 2022.

Blazeby, S.	UK Pool Store Ltd.
Aggett, P.	Tanby Leisure Products Ltd.
Arnett, D.	H2O Swimming Pools Ltd.
Balchin, T.	DG Pool & Leisure Ltd.
Beare, M.	Finn Lough Ltd.
Best, M.	Falcon Pools Ltd.
Bevan, D.J.	Hippo Pools Ltd.
Bibby, C.	Cheshire Wellness Ltd.
Blakey, S.	Whitewaters Ltd.
Brennan, J.M.	H2O Swimming Pools Ltd.
Candlin, S.	RPS Company Services Ltd.
Carr, T.	Guncast Swimming Pools Ltd.
Chappel, H.	PPG UK & Ireland
Clarke, E.	SCP UK Ltd.
Cooper-Pearson, M.	Hertfordshire
Cornell, K.	Rockingham Swimming Pools Ltd.
Du Pleesis, J.	City Pools
Favata, D.	Lagoon Pools Ltd.
Fellowes, H.	Typhoon Aquatics Ltd.
Fenn, A.	PPG UK & Ireland
Franciamore, P.	Lagoon Pools Ltd.
Fricke, M.	HTP Inc. Ltd.
German, A.H.	Sterling Hydrotech Ltd.
Gilden, S.	Guncast Swimming Pools Ltd.
Hamon, C.	The Small Pool Company
Harry, S.	Motives Ltd.
Herbert, J.H.	Rockingham Swimming Pools Ltd.
Hodgson, J.T.W.	Correct Flow Engineering Ltd.
Hogg, M.	Advanced Pool Service Ltd.
Joyce, Michael	Falcon Pools Ltd.
Joyce, Martin	Falcon Pools Ltd.
King, C.	Motives Ltd.
Kinver, K.	ISCA Pools
Kirby, K.	Complete Spas Ltd.
Lakerides, P.	Poolserv
Laparle, R.	Guncast Swimming Pools Ltd.
Long, J.	London Swimming Pool Co. Ltd.
McGeown, R.	Aquapoolco Ltd.
Murphy, S.	Ashridge Pools Ltd.

Nicholls, J.
Ord, Z.C.
Owen, G.
Palmer, L.
Perrett, T.
Pritchard, P.
Santillo, T.
Shanahan, J.
Sharpe, S.
Smith, G.L.
Still, A.L.
Stravoravdis, H.
Sutcliffe, M.
Sweetzer, S.
Tiley, A.
Toop, C.
Truelove, M.
Vowles, K.
Weller, S.
Whorriskey, P.
Wilkinson, G.
Willis, G.
Wilson J.
Witham, J.
Woods, S.
Zagarella, J.C.

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ISPE Seminar Report (Product Profile)

Why selecting the right heat exchanger is vital for your pool

By Tony Carter, Sales Manager, EJ Bowman (Birmingham) Limited.

"Why are Bowman heat exchangers so efficient?" If I had a pound for every time I've been asked that question, I'd be a rich man!

"How can such a small heat exchanger possibly heat a pool this size?" Another question that often comes up and the answer to both is quite simple. Bowman have been making heat exchangers for over 100 years, and heat exchangers for swimming pools for around 50 years, so it will come as no surprise that during that time they've learned a thing or two about heat transfer technology. And putting this knowledge into practice is what's helped make our swimming pool units so efficient.

If you take a selection of heat exchangers from different manufacturers, externally they may look similar, but when you look inside, the differences quickly become apparent.

As an example, if you take a Bowman unit apart, you'll find a tube bundle packed so tightly with tubes, that all the available space is used to accommodate them. This gives the largest possible surface area for heat to be transferred to the pool water.

Unfortunately, when you look inside many competitor units, the tube density is significantly less, so there's much less surface area, which results in slower heat-up times, requiring more energy to be used to achieve temperature. Installers often need to fit more expensive, larger units just to achieve the performance of a smaller Bowman unit. But that's not all. Inside the Bowman unit, the tubes are contained by a series of 'baffle plates' which not only hold the tube bundle securely in place, but are also

designed to ensure the heating water flows efficiently around and through the tube bundle, by a combination of surface area, turbulence (for efficient heat transfer) and flow.

So choosing the right heat exchanger for your pool or spa is very important as it will directly effect the running costs and energy efficiency, reducing the time it takes to bring the pool up to temperature, giving faster pool or spa availability.

And whilst just one heat exchanger is sufficient for most installations, for large, or multi-pool installations, it is possible to install several units in parallel, enabling one of the units to be isolated for cleaning or maintenance, without losing much heat input to the pool.

Bowman heat exchangers are available in sizes from 20kW to 1170kW, covering virtually every pool size, from spas to Olympic pools. They have a maximum operating water temperature of 110°C and a maximum operating pressure of 6 Bar (87 psi).



*King's School Macclesfield
(Photo courtesy of Buckingham Pools)*

Models are available for use with boilers, where supply water is typically 60°C to 82°C, plus heat

pumps and solar panels. Here, supply water is typically 45°C to 70°C, so these units are specially designed with a larger surface area to take account of the lower water temperatures.

One really important issue when installing a heat exchanger is water flow rates. For example, the EC120 is one of Bowman's most popular models and using 82°C boiler water, it can transfer 73kW of heat when the hot water flow rate is 70 l/min. However, if the flow rate is reduced to 20 l/min, its heat transfer capability is reduced to just 41kW – that's approaching half of the performance potential, so pool heat-up takes much longer.



Bowman EC-120

The amount of times we take calls from installers complaining the heat exchanger is faulty because it's not getting the water up to temperature. When we ask them to check the boiler water flow, we find it's

been turned right down. By setting it to the correct flow rate, the problem is resolved and the pool heats up quickly!

Bowman also recommend the heat exchanger is installed in a 'counter flow' arrangement i.e. the boiler water flows in the opposite direction to the pool water, for maximum efficiency, with the unit installed downstream of the pumping and filtration equipment.



Bowman EC-160

A thermostat should be installed on or near the pool water inlet of the heat exchanger and most Bowman units have a 7mm integral thermostat pocket provided to make this easier.

Dosing systems should be installed downstream from the heat exchanger to avoid damage from chemicals.

Installing our EC heat exchangers is quite straightforward, as they are supplied with 'Universal Fit' end covers, specially designed to



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accommodate either 1.5" nominal pipe 48mm O/D), or metric 50mm O/D pool pipework.

Larger units have coated cast iron end covers with either 2½" or 3" BSP threads, or PN6/10 or 16 flange fittings.

Maintenance is very easy too. Just remove the screws securing the end cover and the fully floating tube core can be withdrawn for cleaning.

Servicing is significantly quicker and easier compared to other types of heat exchanger, such as gasketed plate units, where typically gasket replacement must be carried out every 2 years - a time consuming and expensive procedure!

Additionally, every gasket has the potential to leak and detection is much more difficult compared to a shell and tube unit. Minor repair work must be carried out by skilled labour and the swimming pool can be out of service for long periods of time whilst the unit is being repaired or cleaned!

But at the end of the day, the most important thing is to get the right heat exchanger for the job and here again Bowman can help. Using the latest computer-aided design software, we have developed a selection programme that enables us to recommend the correct unit for your pool simply by giving us the following information:

Pool capacity; Boiler water temperature; Boiler water flow rate; Swimming pool water flow rate.

Armed with that information, Bowman can provide the most suitable heat exchanger for your requirements, but if you're unsure of the details, call us to discuss your application further.

This write-up is adapted from an ISPE Seminar presentation, by Tony Carter as part of the 126th ISPE One-Day Seminar in October 2022.


For more details contact
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Company News

Golden Coast honours long-time staff - Team GC members Adam, Nigel and Emma awarded for decades of service.

Leading wet leisure supplier Golden Coast has always been dedicated to finding – and keeping – the best team in the business, and recently honoured several staff members for their long-time service.

Adam Clark reached his 10-year milestone, having started his career at Golden Coast as Sales Manager, before becoming Sales Director, and now, General Manager.

“They say if you find a job you love you’ll never work a day in your life, and that’s how I feel about working at Golden Coast,” says Adam. “It was a particularly proud moment for me when I was promoted to Sales Director, and I appreciate the faith and trust the Directors had in me. Golden Coast is now part of Pollet Pool Group, and as Golden Coast General Manager I’m looking forward to supporting the team and building on the shared family-focused ethos. The last 10 years has been amazing and no doubt the future will be even better.”

Receiving recognition for his 20 years of service is Nigel Paul, HGV driver at Golden Coast.

“Nigel is a key part of the warehouse team, and for him no job is too small,” says Adam. “Nigel is so much more than a driver. He works extremely hard, with integrity and honesty, and is liked by all our customers. He lives and breathes Golden Coast.”

Emma Johns was also celebrated, having served two decades at Golden Coast. As Credit Controller, Emma plays an

instrumental role in operations, and is part of every stage of the customer’s journey, from account setup to payment. “A sale isn’t a sale until it’s paid for,” says Emma. “I’ve been here for 20 years and I really enjoy what I do. I love the people, and just the general aura of the place. There have been lots of changes, but we’re always a united team here at Golden Coast.”

For more information on Golden Coast products and services contact a member of the sales team on 01271 378100, email swimmer@goldenc.com or visit www.goldenc.com.

ISPE Magazine Articles and ISPE Seminar Presentations

Whilst the ISPE Seminars are broadly generic, quite often a speaker will be invited to give a presentation on a particular subject and the presentation will feature a product or range of products from that speakers’ company. This is perfectly acceptable as long as the presentation is of a technical nature and not a ‘sales-pitch’.

Consequently when such presentations are summarised for publication in the ISPE Magazine, there will be some element of product reference, and that is to be expected.

This ISPE does not favour one product range over another and anyone may offer to submit an article for publication in the ISPE Magazine or offer to give a seminar presentation featuring their products.

Commercial or sponsored (product-specific) seminar presentations are available too. Please contact ross@ispe.co.uk to discuss your ideas.

I am writing this just prior to setting off on the 2.5 to 4 hour journey from Norwich to Cobham for the last ISPE Seminar of this season, our 128th.

I say 2.5 to 4 hours because I've now completed this 160 mile journey there and back five times in the last fifteen months or so, and am unable to predict my arrival time due to the vagaries of the A11, the A1(M) and, of course, the M25. Add to this weather reports of up to 10 cm of snow in the south of the country (or none, according to which weather app you consult!) and it's hardly a wonder that these days, I travel to the seminar venue the day before the event so at least I'm there ready to welcome anyone else who manages to get there the next day.

It was great to see so many members during SPATEX 2023, some of who were making their first visit to SPATEX at Coventry. We look forward to another successful show in 2024, Tuesday 6th - Thursday 8th February at the CBS Arena in Coventry.

Many thanks to all those who have submitted articles for publication in this issue. Do keep them coming as this acts as a good bit of free publicity for your company, products and activities (and we get a good article for the magazine in return!).

Plans are now starting for the next ISPE Seminars for the Autumn and Winter. Let us have your ideas for presentations or even volunteer to give a presentation yourself.

To CPD or Not?

Since 2017, the ISPE has been operating the ISPE CPD Scheme. For full details of this please see the ISPE website or send us an email, but the gist of it is, we offer a free CPD folder in which to keep all your attendance certificates and a record card on which to log all your CPD activity.

To give an example, ISPE Workshops at SPATEX offer one CPD point, The ISPE Filtration Workshop awards six CPD points and ISPE Seminars give four CPD points. There are many other training events (not just ISPE ones) and other learning activities which award various numbers of points.

As delegates leave the ISPE Seminars, we ask them to hand in their name badges and collect their attendance/CPD certificate.

However at the 128th ISPE One-Day Seminar, held in Cobham on 9th March, it has come to our attention that the CPD box was missing from some of the certificates (thanks Howard!).

If anyone who attended that seminar would like a (free) replacement certificate, do let us know and we will email a pdf of one proudly showing 4 CPD points.

I will be heading to Cobham, Surrey, again this week to welcome around 40 ISPE Students about to sit their ISPE exams. We hope to include all their names in the list of 'successful students' in the next issue, due out in early July.

Until, then, keep busy!

Ross Alcock, March 2023



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ISPE Seminar Report (Product Profile)

Pool Covers – Light Interactions with your Pool and Energy Losses

Late last year, at the ISPE seminar in Clevedon, Plastipack's Commercial Director, Tim Fielder talked attendees through the specific qualities of pool covers. A summary of this presentation is below.



Tim Fielder

Who are Plastipack?

Plastipack Ltd is an independent specialist manufacturer of energy saving bubble cover material for swimming pools and water storage solutions.

Based in the UK, Plastipack supplies bulk quantities of water storage and pool cover materials to fabricators around the world in roll form. These fabricators cut and weld the cover material to make covers for pool owners and other users.

Plastipack materials **reduce energy consumption** by increasing temperatures, insulating against heat loss, and preventing evaporative cooling. They **reduce chemical consumption** by stopping dirt and debris and providing a barrier to chlorine depletion. The cover materials **preserve water resources** by eliminating evaporation, and **reduce**

waste thanks to their extended lifespans, and are recyclable at the end of their useful life.

Plastipack has a bespoke pool testing facility on their premises, allowing them to conduct in-depth testing and quality control on all of their products.

The importance of covering your pool

By deciding to cover their pool when not in use, the pool owner has already made a positive choice – they will save money, energy and water.

The Cost of Evaporation is Energy

Vaporising water requires more energy than heating the water. Heating 1g of water by 1°C requires one calorie of energy, whereas evaporation of 1g of water consumes 540 calories. This caloric deficit results in evaporative cooling, which is responsible for 70% of heat loss in a pool.

Using a cover prevents 98%+ of the pool's evaporative losses.

All covers prevent evaporation

"A 50% reduction in evaporation from swimming pools by installing pool covers would save close to 9.5 billion gallons of water"

Effectiveness of Pool Covers to Reduce Evaporation from Swimming Pools; Misgana Muleta, Ph.D., P.E., D. WRE; Department of Civil and Environmental Engineering, California Polytechnic State University Jan 2016.

Insulation – Conduction and Radiation

The air contained in and under a cover is the primary factor in reducing conductive losses. Choosing a large bubble or a thick foam offers better conductive savings. For a bubble cover,

thickness offers little change in insulating value.

Available Energy of Light

The light emitted from the sun is divided into a spectrum based on its relative energy (wavelength). At a terrestrial level the sun's energy is filtered by the atmosphere (atmospheric window).

The remaining available energy roughly breaks down to: 5% Ultra Violet; 53% Infra-red and 42% Visible light.

Light Interactions with a Pool

Cover degradation: The UV light refers to the light between 200 and 400 nm, representing about 10% of the sun's energy. It is invisible to the human eye, and isn't used by the plants for the photosynthesis. However UV photons are more energetic and they are deadly in many ways, leading to free radical formation, responsible for cell hydrolysis, premature degradation of polymer, and chlorine consumption.

Photosynthesis (algae) / conductive heat gains: The visible light refers to the light (400 and 720 nm) responsible for photosynthesis poorly absorbed by water. Covers that absorb well in the visible can conduct and radiate the energy the cover absorbs to the pool.

Solar Gain: Near infrared refers here to the sun energy region (720 – 2600 nm) which is not used by algae for photosynthesis. To maximize direct heat gain in the water, it is important to let those wavelengths penetrate the pool and their energy be absorbed by the water.

Emitted heat loss: Mid infrared refers to the atmospheric window between 8 to 13 μm . In this region, the radiations will flow from the water to the outside. Cutting those thermal losses will bring a benefit in the heat retention, especially by clear nights.

Form always follows function – with solar covers, colour does matter

Pool covers can generally be divided into two categories: transparent and opaque covers. Transparent covers allow the Sun's light to pass through so the water can absorb this energy, whereas opaque covers absorb the light, blocking most of the Sun's energy from reaching the pool.

Transparent Covers

The amount of energy a transparent cover will transmit is linked closely to the colour and concentration of the pigment used. The more transparent the material the more energy will be allowed into the pool. However, the pigments themselves and not just the concentration within the cover also has an effect. Metallic pigments such as silver and gold reflect energy in the IR away from the pool reducing the cover's efficiency as a solar cover. As

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such, covers with metallic layers are used primarily indoors or for aesthetic reasons.

Opaque covers

Opaque covers do not heat your pool via transmission of solar energy, instead they conduct energy absorbed from the Sun to the water directly below. Therefore, an opaque cover will not heat a pool as efficiently as a transmission cover.

RaeGuard™

Unlike our other high-performance Guard products and other solar covers, RaeGuard™ focuses purely on retaining heat in your pool. It is designed for use on those pools which are in constant use throughout the day, or indoor pools which are unable to take advantage of free solar energy. With its distinctive white and silver appearance, RaeGuard™ works to save pool owners the equivalent cost of the cover in energy savings within the first year of use. It does this by reflecting and scattering back the heat emitted from the surface of a pool, to maximise heat retention and potential savings.

Sol+Guard™

Sol+Guard™ is well established as GeoBubble™'s highest performing cover for temperature gains. Sol+Guard™ can raise pool temperatures by up to 8°C. The transparent material allows Solar energy through increasing temperatures, while the air in the bubble insulates the pool, holding heat in.

EnergyGuard™ Selective Transmission

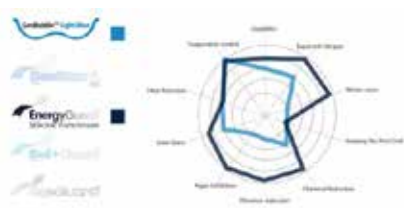
The bubble layer of the material uses a midnight blue pigment which gives the material its selective transmission properties. The material works as a selective filter absorbing the visible wavelengths responsible for photosynthesis. This absorbed energy is

passed to the pool through conduction, while the transmission properties of the bubble layer allow for infrared radiation (IR) to pass through the material and be directly absorbed by the water.

Testing at the Plastipack facility last summer showed a significant energy saving. Based on average UK energy prices during August 2022, the pool covered with EnergyGuard™ Selective Transmission saved around £60 over the 16 day testing period, when compared to the uncovered pool.

CoolGuard™ Ultra

CoolGuard™ Ultra is designed to keep pool water in hotter climates cooler for a more refreshing swim. Its highly reflective Glacial blue top surface mitigates against solar gains and the insulating material helps to keep the water at a cooler, more refreshing temperature. CoolGuard™ Ultra has been found to minimise daily solar gains by up to 55% when compared to an uncovered pool, while also preserving water through evaporation control.



Product Comparison Graph

The best savings will always come from choosing the cover most suited to the specific pool, and to the pool owners' needs. That is why Plastipack have created a tool to help pool owners figure out which cover is best for them. Find out more at: <https://www.geobubble.co.uk/choose-your-cover/>

Front Cover Picture

Refurbished pool in The Solent gains UK Pool & Spa Energy Efficiency ECO award 2022, now so topical with rising energy costs.

Jake Fronda, TnISPE(Cert.), of Love to Swim Hampshire Ltd., was invited by clients to specify and completely refurbish their 1980s-era pool hall in Hampshire. Love to Swim asked Aqua Blue Designs to work with them on a design solution appropriate for the 21st century. The original 1960s-era pool had already been fully refurbished back in the 1980s by Jake's family's business, A&P Pools, so the project has a sentimental part to play with the evolution to a 'new-age' pool.

The Gordon Joyce mosaic water lilies and koi carp, although beautifully crafted and the Pacific blue blend looked decidedly passé. The Waxman NDM copings & buff floor finishes in the pool hall would have to go.

Typical of many 1980s pools, the theme was of classical elegance, with a marble Venus looking down on the bathers and classical balustrading. This concept no longer inspired the current owners and a more minimalistic approach was needed. They were closer to Portsmouth than Pompeii and the Roman Empire has had its day!

In addition to these aesthetic improvements, our clients' fervent wish was for an environmentally efficient end product, which would serve them well in these times of climate change and increasing energy costs. They had done some research of their own, which augmented our design input on these issues.

The pool dimensions were reduced by approximately half a metre all around. The Roman end stairs and the pool deep end were filled with concrete to create a shallower profile, to the clients' requirements of

approximately 1 – 1.5 m water depth. Quadrant stairs were added in a more accessible location. An above ground spa bath was added in the extra surround space created.

Starting with the basics as we always do, we addressed the issue of insulation and chose to build a Polypool insulated panel system within the original concrete pool shell, which was deemed to be structurally sound. Love to Swim & Aqua Blue Designs have enjoyed previous success using this advanced, modular system. The 125 thick insulated panels are proven to offer immediate savings on running costs, along with a high-quality Aquaflex Sol-Guard insulation blanket & reel.

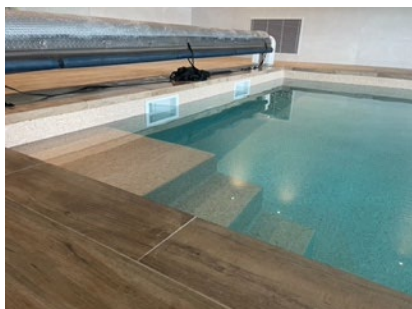
The Renolit Alkorplan 'Touch' on-site lining system was chosen for durability and for its very realistic finish, two new skimmers, dedicated vacuum point, two sumps and inlets, and metered auto water top up. 7x RGBW LED Lumiplus underwater lights were added, along with completely new larger bore pipework with swept bends set in the void between the two pool structures. A completely new filtration system utilising a 600 Hydros swim filter with Dryden Aqua AFM medium, 3 phase Astral Victoria 2.0kW circulation pump, a Pro-Pure ultra-low chlorine and regulated pH treatment, complete with remote Vistapool app control, Norsup 80W UV unit, were tested and handed over to the clients, by the 27-year-experienced Love to Swim pool engineers.

The original oil-fired boiler and tank along with the, now dated, Calorex unit were disconnected. The new primary heat source chosen was

Various stages of construction



a carefully sourced 20kW air-to-water heat pump, with suitable 300ltr buffer tank. These quiet running ASHPs offer a maximum operating temperature of 55°C proven at -8°C in the recent cold snap. A 3kW electrical back-up heater was fitted to the buffer tank for good measure but has rarely been activated.



It has to be said that the clients have invested a substantial amount of money, along with a lot of time and effort to make their property as 'off grid' as possible, installing a 30kW solar array to provide primary electrical supply with Tesla batteries to allow storage of surplus electrical energy as necessary. A Heatstar FXS plus air handling unit was fitted, and some new ductwork and discharge grilles, to connect to the existing underfloor system, plus fresh air and exhaust ducts to atmosphere. The target temp was 32°C when open and

22°C set back when covered, with a 60% RH, the pool in use for 4 hours/day.



New pool edge tiles and slip resistant, more fashionable floor tiles were specified and new less echoing wall finishes, as the finishing touch to this major upgrade which will hopefully serve the clients and make it more amenable to take their healthy morning swim, well into this century. Their co-operation in this upgrade has been much appreciated, by both designer and contractor.



This award for this unique project, was presented jointly to all three companies involved.

Written By M.S. Cormacey, MISPE, of Aqua Blue Designs, on behalf of all parties involved.

Late Congratulations

As is often the case, not all the winners were able to attend the ISPE awards, which were held back in October 2022, at the Ship Hotel Weybridge, as part of the 126th One-Day Seminar.

During SPATEX 2023, on the ISPE stand, we were pleased to be able to present the Peter Horne Memorial Cup (awarded for an outstanding Chemicals exam paper) to the winner, Adam Hudson, from Grayfox Pools Ltd.

Adam did particularly well, scoring an amazing 97% in his Chemicals exam.



Congratulations to Adam Hudson

First ISPE CSCS Blue Card?

About a year ago we asked members to let us know if you were successful in obtaining the CSCS card for Swimming Pool Installers which is available to ISPE Members, and those who have passed the ISPE exams, on application, to the JIB-PMES.

I am sure that many of you have now got your new cards but only one member has actually sent a photo:

Hi Ross.

Please find attached photos of my JIB registration card for the swimming pool and leisure systems installer.



I just had to sit the HVACR specialist test with CSCS - CITB, submitted my pass certificate along with a photo of my MISPE certificate and a recent photo. Hope this is helpful to you and all in the industry.

Best regards,
Ian Thomas, MISPE.

We are happy to promote this news if any of you would like to send a photo of your new CSCS cards.



Smart Pool

SWIMMING POOL CONTROL SYSTEM

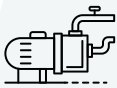
Smart Pool delivers the ultimate integrated experience in automated control of pool equipment and operational processes. This versatile system can be tailored to your individual needs and customised to your own swimming pool specification, providing exceptional levels of adaptability, effortless maintenance and complete peace of mind.

Smart Pool can be operated from your mobile, tablet or PC and has the option of an additional touch screen on the 'central control hub'. Designed to work with any brand of pool equipment, it offers a wide array of control, monitoring and reporting functions operated by software written specifically for Smart Pool by experts with first-hand experience in the field.

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
- Sunset activation, to open the cover, turn on the lights etc
- Configurable to automatically order acid and chlorine from your local supplier
- Works with Apple IOS and Android
- Allows tailoring to individual pool specification
- Includes process guides to help with regular pool maintenance
- Creates 300 hour** history of pool parameters
- 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



Pump



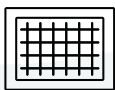
Heating



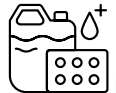
UV



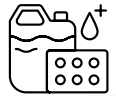
Lighting



Cover



Dosing - acid



Dosing - chlorine



Swim jet*



Fountain*



Works with Alexa



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

ISPE Seminar Report

ISPE Back-to-Basics/Revision Seminar - 21st February 2023

Eighteen ISPE student members attended the recent ISPE Revision seminar, which is open to all as a refresher session but is free of charge to registered ISPE student members.

The four ISPE tutors each gave a presentation aimed at helping those about to sit their ISPE exams.



Chris Carr, FISPE

Each of the four Tutors adopted a different approach in their presentations. First up was Ian Betts, FISPE, who looked at the subject of Construction. Ian said that the new format multiple-choice exam for Construction was adopted in 2022 and would follow the same format for 2023. Ian highlighted the fact that students would be able to rely less on any experience they might have picked up on-site and stressed that students must read the Construction study course manual to familiarise themselves with some of the facts and figures therein, and he gave some specific examples of the sorts of questions that could easily appear.



Ian Betts, FISPE

Chris Carr, FISPE, followed Ian and said that the Filtration exam, too, would be of a multiple-choice format (as per 2022) but Chris ran through various aspects of the subject of Filtration, to act as a refresher, rather than looking at specific questions.

After a welcome light lunch, delegates returned to their desks in the newly refurbished Brooklands Suite of the Hilton Hotel, Cobham, Surrey, and Colin Day, FISPE, talked about the subject of Swimming Pool Chemicals. Colin said that the Chemicals paper would remain in the non-multiple-choice format for 2023, similar to the Heating paper, and gave a few examples of typical questions that have appeared in the past, with some examples of sample answers, showing where marks may be picked up, or lost, and he also gave an overview on the basics of chemicals used in swimming pool water treatment and water testing.

John Scott, gave the fourth and final presentation of the day explaining that the Heating exam paper would be, as before, of a non-multiple-choice format, and like the Chemicals exam, consisted of two sections, one with five questions requiring short, perhaps, single sentence answers, and the other where candidates picked any two from the three questions and give as much detailed, factual information as possible, in the time allowed. John looked at some sample questions and gave examples of good and not so good answers but also looked at various aspects of the subject.

All four Tutors stressed the importance of reading the study course manuals and said that students should not simply rely on what they had picked up during their working days.

All students received a certificate of attendance (4 CPD points) and were sent copies of the presentations after the event.

Whilst attendance at this event certainly does not guarantee an exam pass, it has been shown that many of

those who do attend, find the days very worthwhile. It should be noted that ISPE student members do not have to attend any seminar in order to pass the ISPE exams, and those who do attend this event are not compelled to sit the ISPE exams in any particular year, either, just because they have attended the Revision seminar.

members are charged £25 and non-ISPE members £30. ISPE student members are free-of-charge. Please Contact ross@ispe.co.uk for more details.



Colin Day, FISPE

It is hoped that another Back-to-Basics/Revision Seminar will be presented in February 2024 and anyone who may be interested in attending should register their interest now. ISPE



John Scott, FISPE

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Workforce Development Qualifications

- Your feedback is requested

While there is an excellent ISPE Home Study course which will remain vital for our industry, there may also be a need to have nationally-recognised industry qualifications to demonstrate the competence of staff.

Through joint working between the ISPE, SPATA and STA, there are plans to develop an industry qualification for pool technicians and pool engineers. There may also be qualifications for designers, supervisors and managers. **However for this work to continue, we need to know if there is a demand for such qualifications.**

The exact details for the qualifications, their duration and cost, etc., are yet to be formulated, but key headings are likely to include Civil Engineering and Building, Mechanical & Electrical Services, Pool Operation and Maintenance, Customer Services and Administration, and H & S. If there is demand, a Pool Maintenance course could be launched as early as February 2024.

Your initial feedback on the type of qualifications is very important in shaping what we do to help the industry.

The benefits of having national, externally-recognised qualifications may include the following:

- Better skilled staff, trained to industry standards
- Staff that feel valued
- Opportunities for personal development and career progression
- Build the reputation of your company and reassure your customers that staff are qualified
- External validation will give greater recognition for qualifications obtained
- A qualification can form the basis of an apprenticeship

Please answer the following three questions:

1. Would you support national, externally-recognised and validated qualifications for pool technicians and engineers?
Yes / No (If no, please tell us what your reasons are.)

2. Would these qualifications be of interest to you or your staff/colleagues?
Yes / No (If no, please tell us what your reasons are.)

3. Would you have any comments about the need for a nationally-recognised qualification for our industry?

*Please scan and email your replies, or send your comments to: ross@ispe.co.uk
Thank you for any feedback that you have on the above important topic.*

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Hot Tubs, Energy saving tips to save the planet and your pocket

Firstly, let me introduce myself, my name is Karl Rowntree, Director at RotoSpa, the UK's only hot tub manufacturer.



I have 18 years' experience within the wet leisure industry and felt very privileged to be asked by the Institute of Swimming Pool Engineers to give a talk on energy saving tips relating to hot tubs. The following gives a summary of the presentation I gave at the 127th One-Day seminar in Clevedon.

There is a wealth of knowledge within ISPE, I may not be able to tell you anything new, but I do hope to be able to add some flavour to your existing knowledge and experience.

We face a challenge as an industry, one we can tackle head on if we share our knowledge. Hot tub manufacturers and suppliers were gifted sales during COVID. Faced with an energy crisis, we now must roll our sleeves up and be innovative to ensure our industry has a strong future.

Best practices to reduce hot tub running costs.

A hot tub can be friendly on both the pocket and planet, but we need to ensure we follow some simple advice that's often not seen as being connected to energy consumption.

- **Ensure hot tub water is balanced.** Hard water can increase running costs as it can coat the heating element with scale which acts as a jacket around the heating element, reducing efficiency. Good water quality means water can last for longer, reducing heat-up cost and water consumption. Contamination limits the life span of water. Hot tubs have a small volume of water, showering before entering means water can remain cleaner for longer.
- **Turn off venturi air controls.** These valves, whilst increasing the massage power, also lower the water temperature over time, adding ambient air temperature to the water. It's surprising how many users leave the valves open even though they are told at handover the importance of closing them. This has often been the reason why hot tubs have been costing customers so much to run, especially in winter.
- **Keep filters clean!** Dirty filters overwork pumps and reduce water flow, reducing efficiency. Rotate two sets, installing a clean and dry set weekly. Rinse weekly, ideally without using chemicals and allow to dry. This will extend the life of your filters and keep water circulating freely.
- **Fit a WIFI unit to the spa to give true flexibility and control.** Keep the temperature low when the spa is not in use and increase remotely when you plan to use via the WIFI connectivity, allowing you to connect to the spa from anywhere within the world. This feature is particularly

useful for holiday parks/holiday lets.

- **Hot fill the spa.** Fill the spa with hot water supplied from, say, a gas boiler and mixer valve set to 35 degrees prior to the outlet, meaning less initial heat-up cost.
- **Set the Hot Tub into decking.** Encapsulating the spa into decking, shelters the outer shell from external influences and gives an opportunity to add additional external insulation whilst ensuring you still allow for service access to the inner cabinet.

Covers and Insulation

A quality well fitted cover and cabinet insulation are an integral part of maintaining low running costs

- **Waterlogged or damaged covers.** Tests RotoSpa have performed in our R&D department have shown that a damaged and waterlogged cover can increase running costs by approximately 15%. A waterlogged cover has almost no insulating ability, making pumps and heaters work harder, ultimately increasing running costs.
- **Use a cover lifter.** Ensure the cover is handled correctly and upsell a cover lifter to your customer. Although adding more initial cost it will ensure the cover does not become damaged, in turn causing water ingress
- **Keep the cover vinyl moisturised.** Use a quality vinyl protector spray to ensure the vinyl doesn't crack, again allowing water ingress.
- **Consider the design of the hot tub cover and insulating material used.** XPS insulation is a much better insulator than EPS which is currently used in the majority of spa covers. Current hot tub cover design is poor

promoting heat loss through joins and seems.

- **Use an additional thermal blanket.** A floating thermal blanket can help extend the life of your existing hot tub cover. Even with a quality insulated cover, evaporation between the water surface and the underside of the cover results in heat loss. A floating bubble cover can stop up to 95% of heat loss due to evaporation!
- **Insulation is key to retaining water temperature.** We could have a whole presentation on insulation alone with different manufacturers using their own version and selling the benefits. In my opinion the best insulation is one that insulates the whole cabinet on all internal surfaces but features an inner void that allows free air to circulate, locking heat within the cabinet
- **PU foam insulation.** PU foam is

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the most used form of insulation across manufacturers. It's a great insulator but it degrades over time, terrible for the environment in its production phase and if cabinets are 100% PU foam-filled it can create real issues when having to identify leaks.

- **Supply an additional insulation barrier.** Insulated spa jackets offer an additional layer of insulation when the spa is not in use, designed to fit over the spa cabinet and cover. These can be made to specific sizes at low cost and offer an after-sales opportunity.

Control system features, unlock the standard energy saving features of your control.

Ensure the brand of hot tub you sell uses a quality established control system. Balboa, Gecko and SpaNet being three of the most well-known, all with their own features and benefits, but the features need to be understood to exploit the saving. Features such as sleep timers and Thermal Dynamic Tuning used within the RotoSpa control system can see considerable saving on daily running costs and act as a great sales tool.

Alternative heating sources

The standard electric heating element within hot tubs is the most expensive way to heat the water, there are cost effective ways to reduce this and ultimately pay for themselves.

Air Source Heat Pumps

Ambient air is a safe renewable source of energy, which is also constantly available. The warming of the atmosphere by the sun means that there is a lot of heat energy in every m³ of ambient air, even at colder temperatures. Heat pumps use this energy source by extracting thermal energy from the ambient air.

- Air Source Heat Pumps are currently the most energy efficient way of heating a hot tub

- They can reduce heating costs by up to 75%
- Can heat the water to set temperature in 1/3rd of the time

You get what you pay for! There are many cheap ASHP's currently on the market, being mis-sold and fitted incorrectly. Don't just buy on price. Ideally look for ASHP's that can fully integrate into the spa control to ensure longevity and complement the spa control's standard energy saving features.

Heat Exchangers

- Can reduce heating costs by up to 50%
- Heats the water in a fraction of the time
- Low cost to implement in comparison to other alternative heat sources
- Helps reduce total current draw, ideal for glamping sites with limited power supply
- Enables the use of renewables energy heat sources such as biomass and solar.

RotoSpa are currently developing new innovative ways of heating hot tub water above and beyond what has been discussed so far, along with new forms of insulation and investment within electric roto moulding, a world first in the industry!

If we are to have a future as an industry it's for each and every one of us to have an input into innovation and I welcome any feedback and future partnerships to ensure all our futures are bright and secure.

Karl Rowntree - RotoSpa Ltd -

www.rotospa.co.uk -

Tel. 0121 354 4420

NEXT ISSUE

The next ISPE Magazine will be out in early July. Please send all your project stories, company or product news and/or technical items to us by 1st June.

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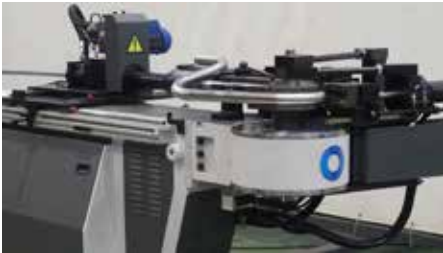


Company News

Bend it like...Plastica! Investing in an engineering upgrade

East Sussex-based swimming pool distributor and manufacturer, Plastica have recently completed installation on an upgrade to their tube bending machine in their engineering department.

The MDH-90-CN2 Mandrel Bender means they can offer longer handrails and ladders. It is also quicker to change tooling to achieve both tight and large radii respectively.



A quicker and more intuitive bending machine in action

It only took the team a single day to complete their training. Dan, Plastica's Engineering Supervisor said, "The new machine is more user-friendly. It comes with CAD/CAM software that lets us pre-test a bending program which aids quoting and ultimately, we cut down on waste material. It is also quicker to change tooling reducing lead times and batch sizes which leads to less stock holding, freeing up valuable warehouse space."

Plastica like to keep the manufacture of as many products in-house. They pride themselves in their ability to offer bespoke sizes for ladders, hand and grab, safety and support rails to give their customers a vast array of options. Available in 304 grade as standard and 316 stainless

steel for salt water pools. Their custom stainless steel ladders and handrails are suitable for both domestic and commercial installation. Cross bracing is available for extra strength.



Example of a bespoke handrail

Contact Plastica to find out more
www.plasticapools.net

Situations Vacant Summary

A number of new situation vacant adverts have been added to the ISPE website (www.ispe.co.uk) in recent months. Please see the ISPE website for the full adverts or contact the ISPE office. Here's a few extracts:

Total Pool Services Ltd.

Experienced Swimming Pool Engineer
Based in Ashford, Kent.

Clear Water Revival

Service/Commissioning Engineer
AND Pool Construction Engineer
Based near the M4 corridor.

Penguin Leisure Ltd.

Pool Maintenance Engineers
Based in Devon.

Falcon Pools Ltd.

Experienced Construction Workers & Labourers
Based in Surrey.

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