

# Jacopa goes from strength to strength

In the January issue of Water Active, we reported that Wastewater solutions specialist Jacopa has reached a landmark agreement with German water technology systems experts Steinhardt GmbH as the sole agent for its wide range of flood and process protection products in the UK and Ireland. The first Jacopa article covered the Steinhardt news in detail. In our second article, we look at the Jacopa business overall.

As Managing Director, Alex Lloyd comments: "The early days of the management buyout in March 2015 were exciting and there's been no let up and the excitement has continued as Jacopa goes from strength to strength with the Company now positioned as one of the largest players in the sector." Sustained business growth of this kind is of course no accident, and "Team Jacopa" has worked tirelessly to develop its outstanding range of products and services whilst maintaining strong relationships with its supply chain, customers and employees. It's the quality of these relationships that is the base from which Jacopa has built a business dedicated to excellence in customer service.

The company is also committed to best-in-class business systems, compliance and financial control which, allied to a strongly customer focused decision-making process ensures it stays close to the market and is able to respond quickly to client needs. Given this framework, product and service development has been a natural progression enabling Jacopa to decide what products are right for the local markets, rather than having to accept a global 'one size fits all' approach.

The company's focus is on continuous improvement, customers need reliable, robust and long-lasting solutions that give them maximum all-round economic benefit, and so Jacopa has invested in standardisation both to provide cost-effective systems and a rapid response to requirements for spare parts.

Jacopa also believes reaching out to its key customers with responsive local teams based in, Aylesford in Kent and Newry in Northern Ireland as well as its West Bromwich head office in the Midlands. It's this local responsiveness that the company believes adds value and sets it apart by operating with good governance as a corporate business with a small 'c' and ensuring consistency in its approach to building a sustainable business.

Above all, Jacopa believe it's their employees which are at the absolute heart of all the company does, and the company has worked hard to develop an effective team with on-going commitment through a programme of high-quality training and management support. It's this knowledge and the expertise that the company has gained since the MBO that has paid dividends both for the company and its customers. Alex Lloyd says, "It's our emphasis on quality management systems and continuous improvement with a genuinely honest and open approach to both what we do well and what we can improve which customers and suppliers alike appreciate."

The company is also rightly proud of its qualifications to work in the market it serves and puts great store on environmental protection and health and safety and constantly seeks to identify and implement best practices in every aspect of its work. It moved quickly to transition to the updated

2015 standards of ISO 9001 and ISO 14001 and is already planning the transition from OHSAS 18001 (Occupational Health and Safety Assessment Series) to the new ISO 45001.

The focus on health and safety and environmental management training and awareness is also an integral part of Jacopa's business approach. The company is passionate about ensuring the correct behaviours and management systems are in place to deliver excellent health and safety performance. And its equally strong commitment to environmental management gives the company the practical tools to successfully manage its environmental responsibilities. The past three years have been exciting ones for the company, and it is looking forward to the challenges of the future and continuing to provide customers with the best possible services and solutions.

## BIM

Information Modelling (BIM) is fast becoming an important tool for engineers across all business areas and is set to become a cornerstone of the construction and operation of assets in the future.

BIM is a set of processes, supported by 3D models and digital technology that add value by creating, managing and sharing digital information about an asset throughout its lifecycle. It provides information on the detailed physical characteristics and functions of buildings, assets, and networks resulting in solutions that can radically change the way in which buildings, infrastructure and utilities are planned, designed, constructed and managed.

Strategically, BIM improves collaboration within the supply chain to redefine what is possible in terms of design, construction, operations and maintenance performance. And, it's these benefits, which have led wastewater solutions expert Jacopa to adopt and integrate the principles of BIM into their business model. However, Jacopa believe that to really reap the benefits of BIM the whole supply chain must resolve inconsistent perceptions and embrace the strategy.

BIM practice is often focused on the project environment. Here Jacopa would like to see collaboration being extended to standardised, configurable product supply across projects and programmes.

The Company is working to formally assess its own competence against PAS 1192, which would feed into the BIM Execution Plan. It has already achieved excellent 3D Inventor results with all of its core products and is now putting most non-core products into 2D AutoCAD with all general arrangement and contract-specific detailed drawings now at least in 2D AutoCAD and when required 3D Inventor.

Alex Lloyd notes: "All of our bills of materials are generated electronically by our IFS ERP system, and most of our range is standardised, so compatibility between new and old systems is

extremely good. We also operate BIM Exchange, an Inventor plug-in programme, and we 'shrink wrap' drawings in a file format that produces models in block form for BIM, as well as exporting building components in HTML file format."

Alex continues: "The investment in standardisation has helped to improve our efficiency by better organising our data and information, and created a useful focus on 'one-time' engineering. This work has given us a much clearer idea of how to generate our 3D Inventor models, and how to store and organise our electronic data and BIM-related information. This will provide an excellent platform for complying with BS 1192:2007 and PAS 1192:2013, and maturing further into Level 2."

The Company has focused its efforts on four or five key product lines to become better BIM enabled, with the aim of creating a firm platform for moving through Level 2 when there is a strong business case.

## Delivering BIM

Alex Lloyd believes that the industry must promote BIM as a "benefit to business rather than a hurdle to be overcome." Says



Lloyd: "BIM must not only be the preserve of senior management, we have many employees who are keen to champion BIM and to lead collaborative working."

Success with BIM also involves having a business strategy, and ensuring that all stakeholders have input into it. This requires companies to think about formally assessing their competence against PAS 1192. To reach this stage, it is necessary to understand how information is processed and transferred in the business, both internally and externally.

Alex Lloyd considers it vitally



important to ensure that all processes are in place before tackling either a one-off BIM project or overall BIM implementation. "Everyone must be BIM enabled, there should be no exceptions, which means investing in training. It's also necessary to ensure that infrastructure, computers and software are up to the task, which means investing in IT and advanced information systems."

Jacopa already have a number of products that are BIM enabled including the robust and well known Jones and Atwood Jeta Grit Trap and are confident that the BIM models and reports created for this can be used in collaborating libraries.

BIM information mainly consists of details such as the product envelope (dimensions), interface and key properties, and generally excludes proprietary details. Jacopa have found that for more complex products such as its STS Straight Through Screen the use of BIM principles and tools supports product development to deliver early wins, even before the benefits of collaboration accrue.

Even the Jacopa rotating biological contactor (RBC), which is more of a process system than a



product can and has been modelled for collaborative working. In this case BIM is made more workable by standardising design through one time engineering.

Progressing BIM to include product lifecycle information also provides on-going benefits. Here Jacopa's product support and aftermarket services are key to the development and understanding which can maximise the benefits of BIM to both the supplier and the end user.

Jacopa freely admit that there is much work yet to do to understand how the business should optimise the storage and use of

information to enable conformity with BS 1192:2007 and PAS 1192:2013. As Alex Lloyd says, "We are ready for BIM and both we and our customers are already benefitting from using its principles, practices and tools. This use will undoubtedly grow, however, unless there is industry wide demand for Level 2 maturity, it will be very difficult to justify the investment to reach this level."

"BIM is not a technology, it is a process with ways of thinking and working which adds value when creating, managing and sharing the properties of an asset throughout its lifecycle. The BIM challenge for the water sector is about very effective use of digital information through supply chains and a digital transition to asset lifecycle information management and that's a strategy which must be applied on a consistent basis across the entire industry."

## Adding value

According to Alex Lloyd: "Adding value is part of Jacopa's DNA" and you don't have to look very far to find examples including its extensive range of spare parts, its world-class maintenance facilities, its level of expertise and excellent customer support together with its commitment to rationalisation, modularisation, and build off-site.

The company is deeply conscious of the need to avoid mistakes that impact not just on it, but also on the rest of the supply chain. One area of focus is its product and application experience and Jacopa has worked hard to ensure its team has the knowledge and skill to ensure it gets the technologies right for customers. It is also committed to sustaining and developing its in-house skills through an apprentice programme that is supported by local partnerships with colleges.

## Resilience

While most folks might be able to agree on a definition of adding value, when it comes to the subject of resilience, the picture is a little less clear. What does resilience actually mean in relation to water and wastewater services? Certainly, resilience in the water industry requires a sustainable supply chain that can provide the products, services and solutions to facilitate it. In this respect Jacopa is planning and managing the business to sustain its longer-term value to the industry. Proactive measures are a key element in resilience, and suppliers with proven solutions and products are best placed to offer strategic advice on resilience, for example, where upstream investment can protect downstream equipment and processes.

Technology plays a key role in creating resilient networks. The company has a range of products that support solutions to build resilience in sewerage systems and sewage works; for example, with grit removal and screening solutions. Removing grit effectively during preliminary treatment is



is able to contribute in a number of important ways, through delivering appropriate technology, focusing on standardisation and building off-site to provide time and cost benefits, and the use of supply chain partners that can demonstrate productivity wins. For Jacopa, innovation revolves around its focus on continuous improvement, identifying risk early and collaborating to ensure the basis of design, scope of work, interfaces with the supply chain and programming of work activity come together to bring innovative ideas to the table.

One illustration is the company's reconsideration and development of Rotating Biological Contactors (RBCs) as a reliable treatment option. The company has a large number of installed units in the UK and Ireland and has drawn on this experience to make many innovative improvements and create a standard range of RBC modular units that economically meet the vast majority of customer requirements.

For example, Northern Ireland Water has recently awarded a framework contract to Jacopa for the supply, testing and commissioning of RBCs. The robust solution is backed by the Company's innovative approach and extensive operating experience of a large number of installed units in the UK and Ireland. Northern Ireland Water regularly uses RBCs to replace or improve the wastewater treatment process, and the equipment is being provided 'on demand' to meet the needs of the utility. During evaluation the modular Jacopa RBC achieved 100% technical compliance. The modular RBCs are easy to install and maintain and are able to deliver an effective solution for both short and long-term treatment needs.

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an essential part of resilience. While inlet screens are undoubtedly the front line of defence, if grit is not trapped it will settle out where flows are slowest, in the sedimentation and digestion tanks, and around hopper bottoms and sludge outlets.

Grit plant optimisation can avoid many hidden problems that not only impact on resilience, but also incur significant costs and wasted time repairing pumps and cleaning out blocked tanks and pipework. To give an idea of the size of the issue, if grit collects in digesters these may cost up to £500,000 to dig out and clean.

The Bosker trash rake is another product that can provide significant resilience benefits, underlining the argument that upstream investment can have downstream benefits. For example, a Bosker system is being used at one of the country's largest water treatment works, Thames Water's Walton site, where it is protecting the huge capacity pumps that abstract water from

the River Thames and take it to the Queen Elizabeth II reservoir. These comprise four massive centrifugal pumps, each capable of delivering approximately 525 ml/d of water.

Conventional equipment may need complex civil works and considerable amounts of space and can struggle to remove large and awkward debris such as tree trunks or tyres as well as the fibrous material that commonly wraps itself round coarse screen bars. The Bosker combines a trash rake, overhead conveyor and debris loading system, which helps to cut costs considerably and also provides a complete solution that works as one to collect and dispose of all debris. The trash rakes have proved to be robust, effective tools that are simple to use and install. They also reduce maintenance and operational costs and reduce the risk to downstream pumps and other vital equipment.

## Nordic Water – Sobyte belt filter

Jacopa's Steinhardt tie-up

isn't the only example of the company looking to expand its product portfolio by means of partnerships. Recently, Jacopa formed an agreement to distribute Nordic Water's Sobyte belt filter; an automatic, self-cleaning filter that removes particles from water in a cost-effective and space-efficient way. Over more than 25 years, Sobyte belt filters have been installed on more than 200 sites and used for applications including food processing and pre-filtering of municipal wastewater.

The Sobyte filter replaces standard primary filtration and sedimentation processes for municipal wastewater, but over a much smaller footprint. The filter is so effective that it can provide an investment saving of up to 50%. Other major advantages are that the system can deliver a drier sludge and does not normally require chemicals, which facilitates further treatment or processing of recoverable material.

The filter works by drawing raw water into its fabric, separat-



ing particles when the water passes through. The screen fabric rotates when it needs cleaning, which is undertaken principally by brush. The screen is then flushed with water at a high pressure, which is both cheaper and, in many ways, better than air cleaning.

The particles separated by the brush are transported inside the filter to a press that dewater the sludge to a very high dry solids content. The wastewater drains out of the filter separately and can normally be pumped back to the incoming stream.

The Sobyte filter has an exceptionally good filtering capacity in relation to its small size, making it an excellent choice when space is limited. It can also provide cost savings, because no large structures or tanks need to be built. The filter fits well into existing facilities and is also suitable as a channel filter. The filter tank casing is made of stainless steel and wetted parts are IP-67 rated.

Thanks to an integrated brush for cleaning the filter fabric, the Sobyte filter also significantly reduces energy requirements. Other belt filters that use compressed air for cleaning require expensive and energy-consuming compressors. The filter is available in three standard versions with different capacities, and special models have been developed for various industry requirements. The filter fabric is extremely strong, to ensure it can withstand higher pressure drops.

Cleaning the fabric with a brush and water also ensures that particles and bacteria are not diffused into the air. Together with its low noise level, this means operations operators can enjoy a pleasant working environment and the required ventilation from the screens is only 5-15 cbm/h, which means ventilation costs are minimised. The belt filter can be delivered with a control panel and can be equipped with control instrumentation and monitoring to meet specific needs such as remote control.

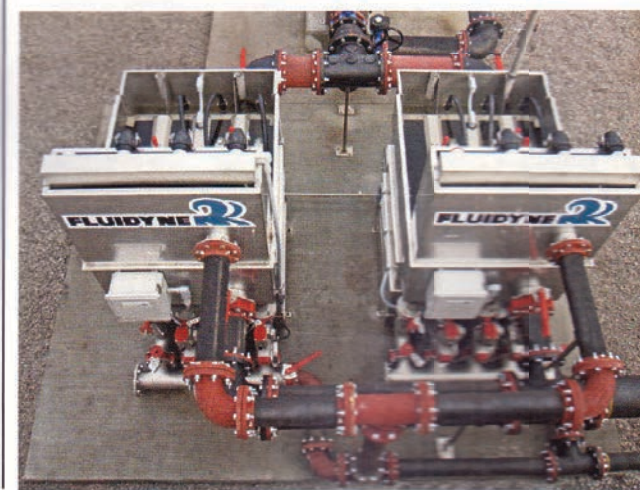
The Sobyte filter belt is incorporated into a cassette that can be easily removed from the filter tank for maintenance and repair. The fabric is made of polyester, which ensures an exceptionally long operating life cycle. Further, as the fabric can be replaced in just 30 minutes without the need to change the belt filter as a whole, users can easily accommodate future changes in filtration requirements.

## The Jacopa facility

While office workers might be divided as to whether a tidy or messy desk is an accurate sign of a busy or lazy worker (!), there's no doubt that, when it comes to manufacturing, only the cleanest, most efficient and busiest of facilities will impress. And the Jacopa factory doesn't disappoint.

## Manufacturing

Standardisation, modularisation



tion, design and manufacture off-site, are of great importance in terms of cost-effectiveness and timely response. 'Plug and play' SAF plant are available, with incorporation of lifting points for simple loading/offloading; Jacopa focuses on containerised solutions, fast response times and simplicity of installation and operation. This sort of solution reduces hassle and costs for customers.

## Maintenance and repairs

Maintenance and repairs mean delivering more than just low capital costs. Energy use, improved efficiency and reduced operational costs are also vital aspects. Service support means providing the best possible after sales care, looking beyond the equipment to helping customer programme and project management teams to assess longer-term decision making about treatment requirements, or shorter-term decisions on individual assets.

## Refurbishment

This is a highly popular service. Refurbishment is extremely important to the industry, particularly given Ofwat drivers to minimise costs and the shift to TOTEX. Parts go back in 'nearly new' condition, cleaned, painted and re-assembled. Jacopa has the expertise and ability to remove old parts from site and check the overall efficiency and performance of assets, and to ensure refurbished parts provide the best, most cost-effective and robust solution.

Refurbishment rebuilding or upgrading equipment and plant can be far more cost effective than replacement. It can drive down operational costs and minimise downtime. Refurbishment is good for the bottom line and the environment, generating a much smaller carbon footprint than new build with significantly lower costs.

Jacopa can provide an objective assessment of cost and performance benefits of replacement versus refurbishment, rebuilding or upgrading. The service covers both Jacopa's own industry-leading brands and those of other equipment suppliers, to deliver optimum return on expenditure and ensure the productivity of critical assets.

## Inventory

Jacopa's knowledgeable after-market parts and service team is dedicated to meeting the industry's exacting requirements. The company has a vast range of spare parts and the flexibility and speed of response that this provides. The team is fully resourced with equipment, parts and tools to complete jobs accurately and to time and all Jacopa's engineers are fully OEM trained to an advanced level. Jacopa is committed to providing quality OEM replacement parts. The aim is to provide parts that are the same or equivalent to those provided