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Press Release

Big in Paris

Thanks to Pontos AquaCycle, Yerres swimming pool is saving more than nine million litres of water per year

Schiltach/Yerres, November 2007. First stop is always the shower before fun starts in the swimming pool. Children in the school group preparing for their swimming lesson this morning at the pool in the town of Yerres near Paris are well aware of this too. Noisily taking their showers, they are blissfully ignorant of the fact that they are also contributing to sustainable use of the valuable wet element. This is because the shower water does not drain into the sewage system but is made reusable by special technology. The grey water recycling plant *AquaCycle* developed and produced by Pontos® (www.pontos-aquacycle.de), a subsidiary of Hansgrohe AG, treats the effluent from the shower in the swimming pool in preparation for a second use. The town of Yerres uses the recycled water for cleaning streets and vehicles as well as watering green areas. The town thus saves more than nine million litres of drinking water and effluent per year – an economy that also pays off – literally.

“Not only cost factors are making sustainable use of water resources increasingly important. Water is also one of the fundamental natural resources and a precious and scarce commodity,” points out Otto Schinle from the management board of Hansgrohe AG and responsible for the business unit of grey water recycling. “It is therefore all the more pleasing that the proprietors of the new swimming pool in Yerres have opted to use the water twice and, by recycling grey water, are making an important contribution to the ecologically and economically sustainable use of this vital element.

Ecologically sustainable concept of construction and operation

At the beginning of 2006, the local authority in Yerres arranged for the demolition of its swimming pool dating from 1975. The structure of the facility housing only one pool was no longer able to meet the needs of the numerous school groups and visitors from the Paris conurbation.

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From the very beginning, the planners had been backing an ecologically sustainable construction and operating concept. Waste was separated and recycled in an environmentally friendly manner. The energy and water budget of the building was optimized in line with ecological aspects: gas boilers, heat exchangers for preheating the water for the pools, a unit for simultaneously producing gas as well as solar collectors for the hot water in the sanitation plants are all part of this concept.

Shower water recycling

The efficient, resource-friendly handling of drinking water played an important role in the overall planning. “Our prime objective was to minimize the operating costs wherever possible,” explained Roger Davito, Technical Director of the Yerres local authority. “Apart from that, it was important to set a realistic framework for the amortization period.” The idea originally favoured for a rainwater collection plant was therefore soon discarded as its function would have been dependent upon the weather, making it difficult to reliably calculate the water savings. In contrast, recycled shower water is always available. The quantity of shower water used in the Yerres project could also be calculated relatively accurately, making it possible to design the Pontos *AquaCycle* plant to meet the specific requirements. When the *AquaCycle* 36,000 was commissioned in Yerres, it became the largest plant of its kind to go into operation anywhere in the world. Every day, it treats 26,000 litres of water from 53 showers to be used a second time. A separate room in the basement of the pool has been created to accommodate the 24 treatment and storage tanks.

The principle is simple

The water drained off from the shower area is first filtered and cleaned of solid matter such as textile fibres or hair. The substances filtered out are fed back into the sewage system, with the filter being part of an automatic and regular backwashing operation. The grey water handled in this way is now treated with a purely biological and mechanical method. Bacteria degrade the different dirt particles

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present in the water. The deposits produced in this way are regularly sucked off and flushed back into the waste water outlet. Afterwards the water is treated with ultraviolet radiation to disinfect it, so that it can finally be used again as hygienically sound clarified water. Its quality complies with the EU Directive for bathing water (76/160/EEC).

Watering and cleaning with the treated clarified effluent

The water is pumped from the clarified effluent reservoir consisting of 12 tanks to two discharge points and used for watering green areas, road cleaning and washing municipal vehicles. Admittedly, advance calculations showed that the recycled water quantities match the annual quantities needed for these purposes. However, the additional tanks are essential as buffer storage because less irrigation water is needed in winter.

Low operating costs – €26,000 savings per year

As no chemical additives are needed, the components are designed for a long service life and the filters and membranes do not have to be replaced, the operating costs for the *AquaCycle* are kept within tight limits. At an average of 1.2 kW/h per cubic metre of water treated, electricity consumption is very low. Set off against the costs is a reduction in consumption of drinking water and hence in effluent generated of more than nine million litres per year.

With French water prices currently at €4 per cubic metre, planners are anticipating annual savings of €26,000 on drinking water and effluent expenditure – after deducting operating costs. In actual fact, amortization of the investment totalling €150,000 seems realistic within less than six years, with this payback period declining accordingly if water prices continue to rise.

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Diverse applications

“In addition to its character as a model of sustainable construction, the project in Yerres shows the many and varied options for the intelligent use of effluent through grey water recycling.” This is the conviction of Michael Hasenbeck, Head of this business unit at Pontos. “Further swimming pools are set to follow the example of Yerres. As we are able to tailor the *AquaCycle* plants to fit specific needs, we are flexible enough to react to the requirements of other public facilities and buildings.”

Technical Director Roger Davito has a similar view: “The difficulties surrounding the topic of grey water recycling are neither technical nor financial but tend to be connected with cultural reservations in the widest sense. Here you still often have to convince the responsible authorities that recycling and reusing water is already a common and established practice in many European countries.”

Address:	<p>“Piscine de Yerres” swimming pool Avenue Pierre de Coubertin 91330 Yerres France +33 (1) 69 48 60 26</p>
Visitors:	<p>approx. 800/day</p>
Proprietor	<p>Communauté d’Agglomération du Val d’Yerres (CAVY/local authority)</p>
Architects’ office	<p>Duval-Raynal</p>

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Pontos GmbH, the youngest subsidiary of Hansgrohe AG and based in Offenburg, is regarded as the specialist for using the high-value and expensive commodity of drinking water twice. The *AquaCycle* systems that it develops and manufactures provide compact water recycling plants for the public and private sector. The standard range includes plants with recycling capacities of between 600 and 30,000 litres water per day. This means that *AquaCycle* systems can be employed to meet needs in a wide range of projects and then tailored to different usage patterns: in single and multiple dwelling units as well as in hostels, hotels and commercial premises. *AquaCycle* has received the *Innovation Award in Architecture and Engineering 2005* and the *Innovation Award of the Year 2006*.

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Picture Overview of Pontos AquaCycle in Yerres town swimming pool near Paris



Pontos_Yerres_01.tif

The swimming pool in the town of Yerres, which opened in spring 2007 after a construction period of only one year.



Pontos_Yerres_02.tif

Large window fronts let light flood into the interior of the building.



Pontos_Yerres_03.tif

In summer the well-tended lawn beckons sun-worshippers. Watering is carried out with recycled shower effluent.



Pontos_Yerres_04.tif

The entrance area of the swimming pool.



Pontos_Yerres_05.tif

A fitness and aerobics studio in the upper storey beckons sports enthusiasts.



Pontos_Yerres_06.tif

When the rapids are switched off, swimmers can take part in water gymnastics in the leisure pool with its rocky backdrop.

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Pontos_Yerres_07.tif

The 25-meter sports pool is ideal for training.



Pontos_Yerres_08.tif

A shower is required before and after swimming. Even the smallest visitors know this. Some 800 swimmers come to the pool every day.



Pontos_Yerres_09.tif

In the sauna area Hansgrohe Raindance overhead showers and the new Raindance side showers provide a refreshing way of cooling down.



Pontos_Yerres_10.tif

Every day 26,000 litres of water from 53 showers flow down the drain. However, thanks to the Pontos AquaCycle plant, not a drop of this is lost.



Pontos_Yerres_11.tif

In a specially designed basement room, the 24 cleaning vessels receive the shower water for the multi-stage purely biological-mechanical treatment.



Pontos_Yerres_12.tif



Pontos_Yerres_13.tif

Pontos AquaCycle 36 000

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Pontos_Yerres_14.tif



Pontos_Yerres_15.tif

Two discharge points on the swimming pool site are provided for filling vehicles from the road cleaning company and the tank for watering parks and public gardens. Recycled water from the Pontos AquaCycle system is also used again for cleaning the vehicles.



Pontos_Yerres_16.tif



Pontos_Yerres_17.tif

Instead of using precious and expensive drinking water, the streets in the little town of Yerres are cleaned with the clarified water treated in the Pontos AquaCycle.



Pontos_Yerres_18.tif



Pontos_Yerres_19.tif

The numerous parks and flower beds, the stadium and the grassy areas around the swimming pool are all watered with recycled shower effluent.

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