

# Water Reflections ...and visions

by Dr Trevor Turpin FCIWEM

The following was a comment from a newly graduated engineer in 1986 who was a member of our team advising a UK water company on wastewater treatment options for the 21st century...

*'That's the trouble with you environmentalists, always causing problems for us engineers.'*

I had to explain to him that if it wasn't for 'us environmentalists' we could let sewage discharge to the rivers and coasts without treatment and there wouldn't be any need for experts like him! I like to think, twenty-five years on, that he took the point – he is still in the water industry and leads major projects for a (different) water company. At an evening meeting of the British Dam Society last year I was asked by a retired member of the water industry what I did - I replied that I was an environmentalist and he said 'Oh, we eat those for breakfast!' I advised him that 'we are all environmentalists now' – ICE being a subscriber to the Society for the Environment and many engineers being chartered environmentalists. I doubt whether he took the point! So has the world really changed over those twenty-five years? I would like to think so...



Pulteney Weir in Bath

Courtesy of Nicholas Pearson Associates

## But if so, what caused this change?

Undoubtedly, one of the major influences was the adoption of the EU Directive on Environmental Impact Assessment (EIA). Since the National Environmental Policy Act was passed in 1969 in the USA, EIA spread throughout the world and it was used for the North Sea oil exploration and development in the 1970s. Water authorities did employ the process for water resource planning, notably North West Water (Morecombe Bay) and Wessex Water Authority (Blashford Lakes) but it was the EU Directive of 1985 (transposed into UK law in 1988) which gave it a profile and made it a force for

change. Water companies were obliged to use it for major schemes such as long distance pipelines, dams and treatment works. Then Land Drainage EIA Regulations made river works to weirs subject to EIA; at sluices on the Worcestershire Avon, work at a SSSI using EIA ensured that nesting seasons and sites for the rare Marsh Warbler were avoided during essential works. I would suggest that it was the separation of the 'regulator' – first the NRA and then the Environment Agency – with a clear brief to protect and enhance the environment, from operators, which ensured that the privatised water companies stuck to their commitments.

Consulting engineers Taylor, Binnie, Watson Hawksley, Posford, all grew towards the end of the 20th century and expanded their briefs – to include environment. Whilst these names may be consigned to history, their successors together with surviving names such as Mouchel and Halcrow were encouraged by the growing legislation which demanded respect for the environment both during design and construction.

The benefits have been manifest. Investment at our coasts has resulted in Surfers Against Sewage becoming friends of the water companies. Rivers no longer look like canals, CSOs no longer overflow at a hint of rain, and flood defences quietly protect our properties (most of the time). Of course it isn't just EIA – there's a plethora of other environmental legislation to comply with – and knowing that it's there is half the battle. It is becoming a playground for m'learned friends and streamlining must surely come. The Water Framework Directive heralded this new dawn, bringing together a number of Directives under one roof – but it spawned a raft of that favourite of the technical specialist, the acronym – RBMPs for a start. And then we have the Directives on Wild Birds and on Habitats which led to the need for HRAs (Habitat Regulations Assessment) to ensure that obligations are met under these regulations – critical if water quality is changing or if abstraction is proposed. Back in '85 we sought to enhance quarry silt ponds during development for water storage lakes and to the credit of the water authority we finished up with a nationally recognised habitat in the middle of a working reservoir; no doubt if the regulations had been in place we wouldn't have even got started!

The downside of all this acronym-centred focus can lead to the current tendency of silo thinking – must do the CMP, the LEAP, the HRA etc...

#### But where does all this lead? More of the same – a continuing upward curve?

The time is approaching when wastewater will be a dirty word... sewage works are now NEWs, providing nutrients, energy and water. Having them re-branded may change attitudes and be seen as suppliers of resources – releasing the valuable raw material (phosphorous), recovering water and producing energy... if we had this approach a few years ago, we might not have struggled to site such useful assets in our communities! (Having said that, Wessex Water Authority tried Recovery as the euphemism for treatment in the 70s and we still had complaints!). This must be the way of the future – can we seriously continue to treat wastewater which results in fertilisers being bound up in inaccessible forms? We still spend ever increasing amounts pumping water diluted with waste when we should be ensuring that the waste is separate from the water – so let's invest in more storm water separation. Sadly, this is to my mind, not encouraged by Ofwat which continues to pursue the policy of producing assets instead of protecting and improving the environment of our rivers and coasts. Maybe that will change in the not too distant future – together with the madness of a system which encourages investment over 5 year cycles so everything shuts down for 2 years!

With the world focussed on climate change and the need to cut costs at the same time, we are also once again looking at the latent 'free' energy provided by our rivers. We are beginning to realise that we should allow our rivers the space and opportunity to provide us not only with water, biodiversity and recreation but, as they have for millennia, energy too. CIWEM has held two conferences in the last 12 months on the subject of small hydropower schemes. I am often reminded of Agatha Christie's Miss Marple, who said that if you want an answer to a puzzle, it often lies in your own village. I live in a village on the Bristol Avon with derelict mills on both banks. For years we've been saying 'we should harness that energy' but the householders weren't in a position to do anything. Then new owners came along and then so did FITS, and like London buses they both decided to have a go at once. All very well until together

they wanted to capture more than 100% of the water flow. The Environment Agency said 'hang on' so it's ended up in court and the Avon continues to flow downstream unharnessed and the lawyers smile...but we don't get our power – will we never learn? Now, was the environment the cause or the effect of this dispute? Miss Marple would no doubt say...answers on a postcard. (I suggest she would wonder if a system which even entertained private ownership of rivers might be the culprit!)

It may be that the so-called Big Society can also contribute to river improvements – if not always getting our feet wet but at least lobbying for improvements in rivers and wetlands – although communities will benefit from guidance so that we don't have a plethora of single-issue campaigns without seeing the bigger (catchment) picture. A role here surely for the Regulator and consultants?

And how about investment in dual piping? – why spend another summer giving our allotments potable water? Without it, what are the options? Reclamation from wastewater plants, water storage or transfer to capture the water from the wetter winters predicted with climate change, or a new reservoir or two (that would keep us all entertained for a few years before being shelved again). Dual service was mooted in the 1890s so it shouldn't be beyond our capabilities in the 21st century. So lets look at the range of solutions, not just 'ah, you'll need a type A for that squire' - it is incumbent on us all to use the ingenuity that is available to us through consultancies, water companies and regulators to make UK Water Projects 2012 an edition where innovation more than ever will be the watchword.

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