Richard Ashley, Professor of Urban Water at the University of Sheffield, is the principal author of Appendix E "Potential Source Control and SUDS Applications" to Thames Water's "Needs Report for the Thames Tunnel" (2010). This was a constrained study with a budget dwarfed by the £100m Thames Water spent to research their preferred tunnel option over that period. All the modelling for the study was done by TW's consultants and serious flaws were later discovered in that data as well as TW's interpretation of the results. Nevertheless Thames Water use this study to dismiss SuDS (Sustainable Drainage Systems) wholesale.

Below Professor Ashley gives his reaction to Thames Water's interpretation of his work.

They say I concluded	What I actually said in the report	Comments
That SuDS are not a feasible solution to tackling the problem in London, and that the tunnel is the right solution.	Technically the disconnection of impervious areas using SUDS is feasible in the London Tideway Tunnels subcatchments studied. There would appear to be potential benefits in terms of the performance of the subcatchment CSOs provided that significant proportions (of the order of 50%) of the impervious areas could be disconnected. It is likely that a hybrid source control/pipe/sewer option will be the most sustainable approach. Notwithstanding the apparent potential value of retrofit stormwater disconnection, there are considerable impediments to implementation in the short to medium term. A number of these impediments, such as arrangements for long-term maintenance, may be resolved in the near future if the draft Floods and Water	It was never stated that SUDS alone would deliver what is needed. A hybrid solution was always promoted, getting the greatest benefit from the reduced tunnel (if needed) and the GI. GI/SUDS can be progressively installed and will deliver benefits from day 1, unlike the tunnel.

They say I concluded	What I actually said in the report	Comments
	Management Bill is adopted into legislation.	
Thames Water didn't set out just to do the tunnel; much research and analysis on potential alternatives.	As only 'conventional' SUDS systems have been examined in this study, alternative options should also be considered.	This depends on how the word 'much' is interpreted. No equivalent modeling of the alternatives has been funded.
The tunnel represents that best value for money solution; it is also the least disruptive option.	It is likely that a hybrid source control/pipe/sewer option will be the most sustainable approach. The whole-life costs of disconnection has been evaluated and found as a minimum to be of the order of £20-59M in each subcatchment for a design life of 50 years. In the absence of information about the costs of implementation of the proposed sewer tunnels it is not possible to assess whether or not this is comparably cost-effective. Having reviewed the available guidance on assigning value to the benefits of using retrofits, it was concluded that there is inadequate information to monetise the value of the options considered at this time. Retrofitting stormwater management systems is also invariably much easier to incorporate in regeneration of urban areas than conventional piped and sewered systems.	Completely INCORRECT. Best value for money brings in the greatest benefit to cost ratio. A GI /SUDS solution would accrue considerable benefits[1]. The COSTS of the tunnel so far do not include the carbon costs.
The cost to implement green	The assumptions used in the WLC assessments	This is their interpretation. We used the most up

[1] e.g. when evaluating flood risk schemes for grant-in-aid multiple benefits are to be taken into account: Guidance for risk management authorities on sustainable development in relation to their flood and coastal erosion risk management functions, October 2011; Understanding the risks, empowering communities, building resilience The national flood and coastal erosion risk management strategy for England. Presented to Parliament pursuant to Section 7 of the Flood and Water Management Act 2010. Session: 2010-2012. Unnumbered Act paper Laid before Parliament 23/05/11;

They say I concluded	What I actually said in the report	Comments
infrastructure across London would be much greater than that of the tunnel.	should be further tested, by sensitivity analysis and at the same time alternative retrofit options to those trialled here, should be examined, taking into account the enhanced opportunities from a 'stormwater management train' approach. The WLC model could be improved by the use of more context specific assumptions and willingness to pay local survey data which needs to be updated and would necessitate early and considered stakeholder engagement.	to date whole life costing model for SUDS. We also were only able to look at a very limited range of the most obvious candidates. A more refined analysis, with more recent models for performance and costs needs to be done.
Green infrastructure is longer-term, but Thames Water doesn't have 25 years to implement it due to EC infraction proceedings and potential fines.	Ultimately there will be widespread use of SUDS in England as new developments are encouraged to use them and as existing housing and property stock is renewed. Therefore over time these systems will become 'the norm'. The question remains, however, as to whether it is sensible to wait for more than a century for this to come about. The construction of new sewerage is known to require considerable energy use, emitting significant greenhouse gases and locking-in users for long periods and hence where this can be avoided now there are important opportunities to contribute to the mitigation of climate change.	The tunnel is also longer term. It will deliver NO benefits until it is finished, unlike SUDS/GI that will provide benefits from day 1. SUDS/GI can also be trialled to learn by doing as in Philadelphia. The EA set the standards NOT the EU. The self set standards represent a Rolls-Royce quality target. EA has NEVER been properly audited on this. No one else is allowed to see their models.
Green infrastructure cannot provide the	There are considerable additional potential	Their comment is just plain WRONG. In fact the

They say I concluded	What I actually said in the report	Comments
benefits that the tunnel option would generate.	benefits that may arise if retrofit SUDS are used for disconnection although these will not on the whole accrue to TW. These include water quality improvements, which would assist with delivery of the Water Framework Directive requirements; enhancements to green spaces in urban areas that would contribute to ecology, add environmental benefits and help mitigate and adapt to climate change through amenity and heat island mitigation. In addition they will also provide opportunities for water supplies in areas that become water stressed in the future.	tunnel cannot provide the range of multiple benefits that GI can[2]!

Prof Richard Ashley, Sept 2012

[2] see accompanying draft report