

SWIG October 2014

Sustainable construction is cheaper- How do we get there?

Building and developing with sustainable water and green infrastructure

The October meeting was held in the comfortable conference facilities of 24 Greencoat Place, Victoria, London. After a buffet lunch, the delegates assembled in the barn to be welcomed by the Chair of SWIG, Mr Neal Landsberg. His introduction was titled 'What is cheaper and who has done it?- What we are aiming for' and featured a YouTube video of the new M&S sustainable Two Oaks store in Cheshire. He explained that the term 'global warming' had now transformed into 'global wierding' as more and more innovative solutions were being applied to help save the planet.



SWIG Chairman- Mr Neal Landsberg

The keynote speaker was Peter Massini from the Greater London Authority (GLA), who is the Principal Policy Officer for Urban greening. He explained that London has had a planning policy since the 1940s, but in the past the aim has been for preserving and conserving green spaces. The London Plan, launched in July 2011, is not prescriptive, but a framework that can be developed at local level into more detailed and descriptive solutions. Special Planning Guidance documents (SPGs) are now produced along with publications such as 'Sustainable Design and Construction' that show how

various 'blank' green spaces- such as those at the ends of some roads- can be utilised and little used parts of roads turned into Pocket Parks, with SUDs benefits by making such spaces 'multifunctional'. One of the largest examples was the Olympic Park. Such work is not limited to the UK as shown by the NYC Green Infrastructure Plan that is used in the USA's famous city of New York. However, London is a special case as with the Thames barrier the city is well protected from river flooding. However, flooding from excess surface water runoff is not yet addressed and is one of the aspects of the new consultation in London Infrastructure Plan 2050.



Peter Massini

Peter was followed by the first of the responding speakers, Prof Colin Green, who had some very different opinions to Peter. Colin spoke of the invisible bits of green infrastructure and quoted from figures from the National Audit Office that indicated that currently our total debt is 5X the national income. His argument was that much could be done to reduce energy consumption by addressing heat island problems that currently cost around £2m in the SE of England. He suggested to Peter that the cost of implementing the London Infrastructure Plan would be around £160,000 per household and that for every new home built in the UK the cost of water infrastructure is £26,000 that is paid for by all the bill payers.

He suggested that although some sustainable systems may have development costs, the lower running costs could produce paybacks of only 3 years and the economies of scale and experience would reduce that in time. He mentioned that the EA figures show that water use in hotels is 6X that of domestic dwellings and ended by stating that we need more sustainable water faster.



Prof Colin Green

A regular SWIG speaker, Peter Wilder, provided some examples of how 'thinking creatively beyond the brief' had proved to be beneficial in a number of case studies. He proposed that the maintenance of surface water quality was far cheaper with green infrastructure and the resultant structures required less maintenance than traditional passive 'grey' infrastructure – which used pipes, tanks and numerous concrete structures. One example he gave was the former Kingspan Lighthouse building that originally stood in the BRE Innovation Park in Watford. That building was to meet the 'Code for Sustainable Homes' level 6 (the highest) and even though it had many sustainable and renewable features it was going to fall short of the required number of points. To attain the missing points work was carried out on the surroundings so that green infrastructure such as swales, ponds and rainwater harvesting were included.

Peter showed other examples, such as the hospital in Bermuda where a closed loop has been created so that no water is wasted and the building is hurricane resistant. This building included not only rain and grey water reuse systems, but also sewer mining where the wastewater was used for providing nutrient rich water for irrigation. By using such techniques the need to use diesel generators to run desalination plants is reduced or even removed.

Living lattice buildings were examples where whole walls could be opened and closed at different times of the year to help cool, light and ventilate the buildings. Roof level wetlands have been used effectively in the USA and China. Examples of some future gardens in and around buildings were shown that in many ways resembled the fabled hanging gardens of Babylon.



Peter Wilder giving his presentation



Peter and Neal discuss issues

From the Royal borough of Greenwich, Own Davies, the Flood risk manager spoke about 'Making the brief workable as an urban engineering design'. His opinion was that if you get it right it will be cheaper. He gave examples of how materials needed to be sourced correctly and negative opinions countered.



Owen Davies shows examples of poor installations where the wrong materials had been used.

Last to speak before the break was another regular SWIG Awards Judge- Miranda Pennington. She had hoped to speak about many of her customers' excellent projects where green planning and development had worked well. However, she found that all her customers were reluctant. So, instead she gave some general examples of how at the beginning of the Code for Sustainable Homes it was found to be challenging to achieve even a Code level 3 home, but now Level 4 is the norm and easily achieved. While most of the requirements for such levels relate to energy, and there have been significant developments in the reduction of energy usage in buildings over the years as the Building Regulations have regularly been upped, the code and Regulation requirements for water consumption have not been so challenging. The reduction to 105 litres per person per day (from an average of 150) is good, but not as great a percentage reduction as for energy consumption. One of the incidental developments that has brought this about is the reduction in cost of photovoltaic

panels. It is now the norm to install PV as a way of minimising mains electricity consumption and is a cheap way of getting sustainability points in most schemes. However, such a situation does raise the question of who bears the cost and who gets the savings?

The issue of grey water reuse was thought, by Miranda, to be not easy to buy into. It is no longer necessary to achieve a CSH level and has maintenance issues. However, in hotels and student accommodation the use of greywater reuse systems is growing. In contrast, green roofs are featuring in all projects today, but what will be the outcome of the recent Housing Standards Review? Schemes such as BREEAM may still have their place, but Building Regulations are also gradually raising the level.

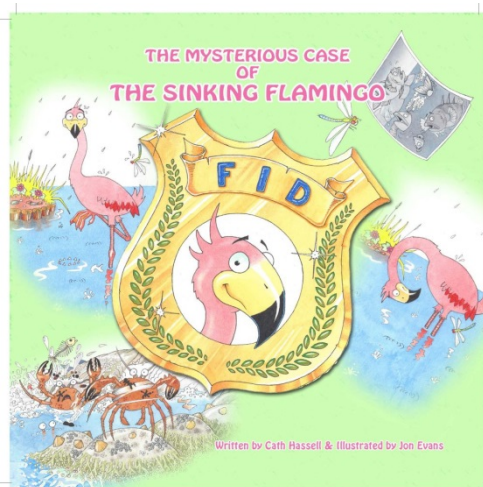


Miranda Pennington



Cath Hassle

Before the scheduled speakers returned, SWIG regular Cath Hassle took to the floor to publicise her



new book for children-‘The mysterious case of the sinking flamingo’. The book is about rainwater reuse at the flamingo pond in the Bristol Zoo. Various characters are featured including Clarence the Crab, who ‘does not like poo on his head’, Rhodri the rat, Sanvi the stickleback and Frankie the flamingo.



The text for the book is written in ‘year without rain’ font and Cath needs funding to finish the artwork and get the book published so that it can be given to children in schools. She is looking for £500 for a link, an acknowledgement in the book and 30-50 copies. In December she will try

KickStarter – a crowd sourcing site- to obtain more funding. If you would like to help Cath go to her website (<http://www.ech2o.co.uk/frankie.shtml>).

From Bedfordshire, Laura Kitson (Central Beds Council's Planning and green infrastructure co-ordinator) spoke about 'Promoting SuDS through the planning system'. She explained that in her area that is bounded by Milton Keynes, Cambridge, Luton and Bedford, they are expecting growth of the size of the city of St Albans in the next few years. There is a great opportunity for good SuDS systems in the area, but they need to be; an asset, multifunctional and compliment the local character. This will be achieved by using existing Council policies to compliment National Standards.



Laura Kitson



Luke Engelback

The penultimate speaker was landscape architect Luke Engelback; who spoke about 'Water Biophilia and Ecourbanism' (Biophilia means lover of living systems). He started by talking about books that were relevant to the topic of sustainable construction. These included; 'Natural Capitalism' by Paul Hawken, where it is proposed to use less to improve everything and 'Once In a Lifetime: City-Building After Disaster In Christchurch' about making a city resilient (<http://onceinalifetime.org.nz/>). He stated that the UK has a water stress problem and this is often hidden in embedded water use for such items as milk, where it takes 900l of water to produce 1l of milk.

Guidance on designing sustainable areas is available from the Landscape Institute in documents such as 'Profitable Places' and 'Public health and landscapes'. He mentioned the GLA guidance and how WSUD strategies can alleviate pulses of flood water and contribute to urban thermal regulation. Examples of retrofitting in Paris were shown. Luke then looked at trees and explained that they improve air quality and can provide urban food. As examples he included the striking design of the Bosco Verticale in Milan, Jardins des Grands Moulins in Paris, Malmo Sweden, Asperg (near Stuttgart) in Germany and the book 'Trees in hard landscapes – A guide for delivery' (free from <http://www.tdag.org.uk/trees-in-hard-landscapes.html>). He implored the audience to 'start making it fun!'.

The final speaker was Watermatic's MD Zac Ribak who presented the Good, the Bad and the Ugly of WSUD. The Good included the 2012 Olympic Park London, Paulton's Park (Pepa Pig World) and a large house of undisclosed address. The Pepa pig installation was a zero discharge, green roofed building and a previous SWIG Award winner. The large house was set at the lowest point in 400 acres and featured surface water collection using silt traps of 2X6 m feeding 60,000 litre storage tanks. The water is used for car and patio cleaning as well as landscape irrigation. The installation has helped to reduce flooding in the grounds. The design also includes a green roofed underground tennis court.

The Bad was indicated by a photo of workers watering flowers using a bowser. Zac also mentioned that if a good product is used wrongly the results are not good.

For the Ugly, Zac used one example, the Vauxhall Tower in London. Although this was actually a good design it had been isolated and did not include any of its neighbouring buildings, so the full potential for sustainability had not been achieved. He also listed issues such as; lack of design, a tick-box approach, unfinished swales and over recycling (resulting in salinity of water) as Ugly.

However, he finished by concluding that the trend was upwards, the perception of sustainable construction is good and there is more whole system thinking. He reminded the audience that the Inca and Mayan civilisations died due to a lack of water, but that in 600BC the Hanging gardens of Babylon were one of the Seven Wonders of the World.



Zac Ribak

After the main event closed many people stayed behind for discussions. The next SWIG event will be held at the Virgin Rooftop Gardens on Tuesday 13th January 2015.