



RFS

Journal of the RSM Retired Fellows Society

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Editorial:

Catherine Sarraf



December issue, 2022! How time flies! I wonder how many of us, like me, when roughly estimating when a 'recent' event occurred, judge it by was it 'before lockdown or after'? Over the summer, many of us will have had varieties of experiences – SO many things to do! Much was cancelled or postponed during lockdown, that this summer has been the time for catching up. We have our hobbies and interests, and grandchildren, all to be fitted in; in May 2023 there's Sue Weir's Rhine and Moselle river cruise to look forward to, and walks plus external events (see pages 4&5 for details). I'm particularly happy that during these busy times many of you have been consulting this journal. For example, our Chair, Jeffrey Rosenberg volunteers at London Zoo, where he now has a variety of contacts, and the opportunity to provide such a wide spread of wonderful animal photographs for us. Jeffrey says:

The London Zoo is a wildlife photographer's paradise; so many animals to enjoy with views unimpeded by glass windows or bars. The Zoo hosts a camera club for staff including volunteers. Our RFS journal contains photos taken by both skilled photographers and amateurs such as myself using a phone. It has been a particular pleasure and privilege to be able to document the development of our Sumatran tiger cubs born in June, and to share some of the images with you all.

Also, I'm extremely delighted when I receive comments from our Fellows, Ted Reynolds writes:

WWII POWs – in the UK.

I was intrigued by your RFS article on WWII POWs in the UK.

I also had a Welsh childhood (I am a Cardiff graduate myself as was my father) and during the war I definitely met three German POWs (see attached photograph). I was born in Caerleon, Monmouthshire in 1935, where my father was the local GP and also was interested in photography. The three POWs (Bruno, Irwin and one other) in the photograph came regularly to do odd jobs

in the house and garden in 1944/45. At least two of them became family friends, returning to visit us years after the war. In the background is the Billiard Room where my family and the village community raised money for the Red Cross. The elder of my 2 sisters in the picture still lives in the family home, aged 85, my younger sister having died 2 years ago. I think the POW camp was over the hill towards the Bristol Channel, somewhere between Magor and Llanwern.

I thought the above would be of interest to you and other Retired Fellows.

Ted Reynolds MD FRCP FRCPsych



As ever, there is no peer review ahead of publication here, and 'Information for authors is to be found on the back cover. Keep reading! Keep staying in contact! And keep writing to me!

Forthcoming events

Programme Internal Meetings 2023

Jane Reeback

16 February

Dr Shane O'Rourke:
Historical roots of the war in Ukraine

16 March

Rupert Wallace:
The sea – ungoverned space

20 April

Caroline Swash: Best stained glass in London

18 May

Frances Wood:
The Silk Road

15 June

Professor Robin Dunbar
The (neuro-)anatomy of friendship: a multidisciplinary approach

External Events

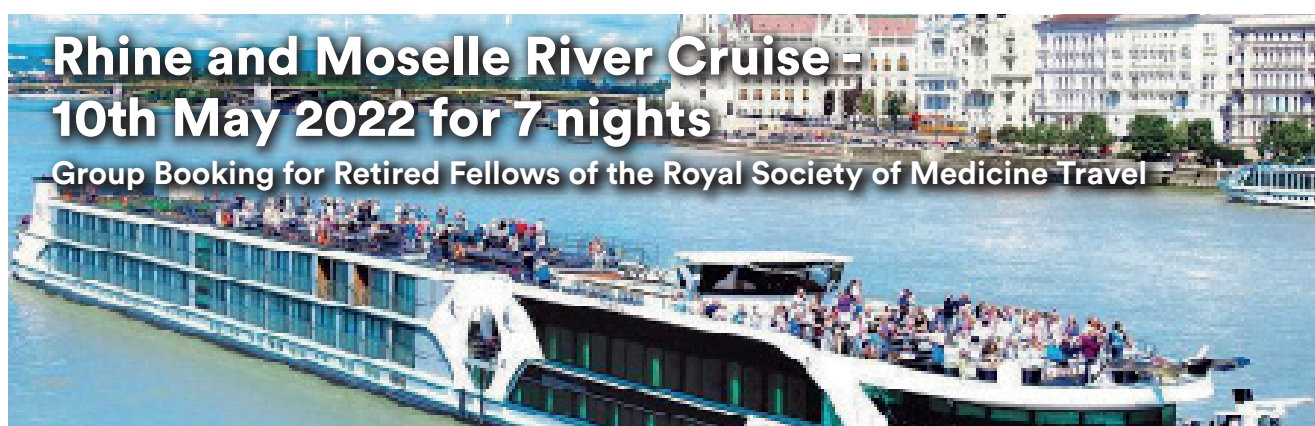
External Events Programme - Sue Weir (077134 02651)

10 - 17 May

Cruise on the Moselle and Rhine rivers, with Riviera Cruises. The cruise will take place between 10th May and the 17th May, and is an EXCLUSIVE PACKAGE for us. Drinks at meal times are included. Please ring Alistair 07826 853423 to BOOK DIRECT

20 June

Watts Gallery Artists' Village - Tuesday 20th June. George Frederic Watts OM RA was widely considered to be the greatest painter of the Victorian age. Together with his wife Mary Seton Watts, they established a unique pottery and gallery at Compton, near Guildford. We will also be visiting their home and studio, Limnerslease and the beautiful Cemetery Chapel, an Arts & Crafts masterpiece. Guided tours are arranged and lunch will be on site. Precise booking details for this event will be published later.



Rhine and Moselle River Cruise - 10th May 2022 for 7 nights

Group Booking for Retired Fellows of the Royal Society of Medicine Travel

Your Itinerary

DAY 1 Arrival in Cologne
DAY 2 Cochem
DAY 3 Trier
DAY 4 Bernkastel
DAY 5 Koblenz & Boppard
DAY 6 Rhine Rudesheim
DAY 7 Cologne
DAY 8 Return home

Cabins and Pricing

Double and Single Occupancy

Emerald Deck Suite (Lower)
£1,778.00pp - £3,298.00pp
Ruby Deck Suite (Middle)
£2,678.00pp - £5,197.00pp
Diamond Deck Suite (Upper)
£2,878.00pp - £5,597.00pp

For more information please contact our travel agent, Alistair Gill on 07826 853423 or Susan Weir on 07713 402651

Walks with Sue Weir

April

- 18** | **Around Holborn's Past** - an opportunity to see a once very fashionable square, some elegant streets and the haunt of duellists and barristers, not forgetting hidden churches and a unique pub. Meet at Holborn underground station 11.15am for the morning walk and at 2.15pm for the afternoon walk.

May

- 26** | **Further Along the Embankment** - to continue our exploration of the gardens, statues, small streets, a Roman bath and the law from Somerset House to Blackfriars. Meet at the Strand entrance to Somerset House 11.15am for the morning walk and at 2.15pm for the afternoon walk.

June

- 9** | **From Farmland to Fashionable Faubourg** - elegant Kensington was home to writers, composers and seafarers, come to discover where they lived. Meet at Gloucester Road underground station 11.15am for the morning walk and at 2.15pm for the afternoon walk.

July

- 13** | **King's Cross** - Something old and something new, water & a wild life garden plus a university and 'the place to live' - it is not just a station! Meet at the entrance to the British Library 11.15am for the morning walk and at 2.15pm for the afternoon walk.

Programme of the Camera Club 2023

Richard Lansdown

All in house at the RSM, coffee at 10:30am, meeting starting at 11:00am

January

- 11** | Kew through the seasons Paul Sievers

February

- 23** | Members' Meeting

March

- 6** | Presentation Meeting

April

- 14** | Speaker to be confirmed

May

- 10** | Members' Meeting

June

- 22** | Presentation Meeting

September

- 11** | Speaker to be confirmed

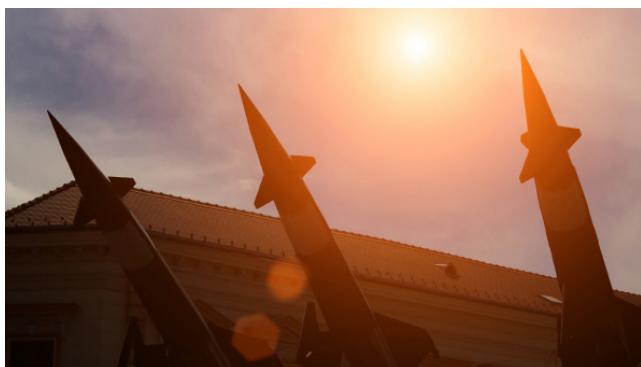
Retired Fellows Society 2023

Lecture abstracts and biographies of speakers

Putin's war in Ukraine: an imperial fantasy

Professor Shane O'Rourke

Thu 16 February 2023



This event will look at Putin's war in the context of Russia's imperial past, the continuing desire of the Russian leadership and a large section of the population, for an empire. Professor O'Rourke will explain Russia's relationship with Ukraine through the centuries and why it remains an essential component of Russia's desire for empire. The talk will link this imperial relationship with Putin's views towards Ukraine, demonstrating that he fully shares this imperial fantasy. In this way, Professor O'Rourke will show that the war is not simply a product of immediate circumstances and events but has its roots deep in Russian history and the continuing obsession with empire.

Shane O'Rourke is a historian of Russia and has been a teacher of Russian history for the last thirty years. He has written extensively on Russian and Soviet history, including two books and many articles. At present he is finishing a book on comparing the emancipation of serfs in Russia and slaves in Brazil. He is a fluent Russian speaker and also learnt Portuguese for the study on Brazilian slavery. He has taught many different courses on Russian history, including postgraduate courses on Russian Foreign Policy over the last 200 years, the Russian Revolution and Catherine the Great. He has been going to the Soviet Union/Russia for over thirty years and in the last eight he has made many visits to Ukraine, including Lugansk and Donetsk.

The sea: ungoverned space

Commodore Rupert Wallace CBE

Thu 16 March 2023



Despite covering two-thirds of the Earth's surface, the sea is out of sight and frequently out of mind for most of us. Yet what happens on and under the water matters to us all. During this meeting, Commodore Wallace will use his extensive practical and policy experience to show that there is remarkably little sovereignty or control of the world's seas. By outlining the development of this historical lacuna and its associated legal framework, the lecture will focus on three critical and far-reaching consequences for the modern world and their impact on our daily lives and prospects: resource conflict, piracy and migration.

Rupert Wallace retired from the Royal Navy in 2014 as a Commodore, after a career which included the Falklands War, three ship commands, heading a flotilla of destroyers and frigates, and strategic UK defence relations work throughout the Middle East and South Asia. He has worked in every Arab country, plus the Palestinian Territories, in addition to Iran, Turkey and Israel. On retirement he completed a postgraduate degree in International Relations at the London School of Economics. He now talks widely in schools, institutions and on cruise ships, concentrating on the Middle East and US Politics. He is History Director on an outreach programme to inspire less-advantaged pupils to apply to the top universities. Rupert travels extensively, including riding a bicycle

across America, independently travelling the Silk Road from Iran to central China, and is currently in the middle of a 10-year walk from the Atlantic to the Black Sea. To keep his feet wet, Rupert and his wife Kate also sail their boat in Greece.

London's stained glass

Caroline Swash ATD FMGP

Thu 20 April 2023



Caroline's father and grandfather were stained glass artists, living and working in Gloucestershire where she grew up, studying at the Cheltenham School of Art then The London Institute, in preparation for a teaching post. Her first school was one of the earliest Comprehensives, Mount Grace, Potters Bar and it was there, as staff on a French exchange that she saw coloured glass used for the first time in a radically modern way. Back home, she learnt the rudiments of the craft from her father before returning to Mount Grace to make heraldic panels for them. Then, on a car journey, she fell in love with Michael Swash, they married and went to Cleveland, Ohio where Michael was studying Neurology at Case Western Reserve University. Here she was commissioned by Rev W Chave McCracken to create a series of stained-glass windows for St Paul's, Cleveland Heights. Back in the UK, Michael returned to The London Hospital, later they had three sons and Caroline continued building windows.

She also became Hon Secretary of the British Society of Master Glass Painters (BSMGP) organising lectures, talks and exhibitions with this lively organisation. As commissions increased, she worked with Goddard and Gibbs Studios designing and making windows for Portsmouth, Salisbury and Gloucester Cathedrals as well as the entire stained glass scheme for St Barnabas, Dulwich. She also ran the Glass, Fine Art and Architecture courses at

Central Saint Martin's College of Art and Design for several years. Alumni have since created many fine works in unique and architectural glass. However, she feels that her most significant contribution to the craft has been Professor Johannes Schreiter's Medical Science and Stained glass windows in the Medical Library at the Royal London Hospital in Whitechapel. Caroline continues to work in glass, currently completing a window for Dr Luise Parsons based on the Belladonna window, originally created for the Parlour at the Worshipful Society of Apothecaries' Hall in Blackfriars.

The Silk Road: jade, cucumbers, spies and treasure-seekers

Dr Frances Wood

Thu 18 May 2023



The Silk Roads were ancient trading networks stretching from China to the West, generally assumed to have been named by the German geographer Ferdinand von Richtoven in 1877. For westerners, it was the arrival of silk in ancient Rome that prompted the name but the Chinese, transporting rocks from Khotan to Chang'an (today's Xi'an) might have called them the Jade Roads. Crossing the deserts of Central Asia the roads passed through the many different cultures and kingdoms that rose and fell throughout the centuries and the discoveries of archaeologist/explorers such as Sir Aurel Stein in the first years of the 20th century revealed much about long-forgotten entities such as the short-lived Tangut empire and the mercantile Sogdians who dominated Silk Road trade from the 4th century. Visiting distant desert sites such as the long-abandoned cave temple complex of Dunhuang, Stein collected more than 20,000 artefacts for the British Museum, including the world's earliest printed book, produced in 868

AD, some 500 years before Gutenberg. Dr Wood studied Chinese at Cambridge, spent a year at Peking University as a worker-peasant-soldier student and wrote her PhD on Peking's domestic architecture. She looked after the Dunhuang collection of manuscripts in the British Library, collected by Sir Aurel Stein in 1907, an archive of some 14,000 paper documents dating from the 5th to 11th centuries.

The (neuro-)anatomy of friendship: a multidisciplinary approach

Professor Robin I.M. Dunbar

Thu 15 June 2023

Friendships are a primate speciality, and have evolved to buffer us against the stresses of living in large social groups. They have a bigger affect on our psychological health and wellbeing, as well as our physical health and wellbeing, than anything else. Friendships are, however, extremely expensive to create and to maintain, both in terms of their time cost and in terms of their underpinning neurobiology. The basis of this lies in the dual process mechanism that allows primates to manage their relationships. One arm of this forms the Social Brain Hypothesis that sets a cognitive limit on the number of relationships we can have; the other is formed by the endorphin system and the way this is triggered by physical touch acting through the afferent C-tactile neural system. In this lecture, Professor Dunbar will explore the behavioural, cognitive and neurobiological bases of friendships in comparative perspective, and show how we use these as a basis for forming communities.

Robin Dunbar MA PhD DSc(Hon) FRAI FBA is Professor of Evolutionary Psychology at the University of Oxford, an Emeritus Fellow of Magdalen College, and an elected Fellow of the British Academy, the Royal Anthropological Institute, the Finnish Academy of Science & Letters and the Hungarian Academy of Sciences. His principal research interests focus on the evolution of sociality (with particular reference to primates and humans). He is best known for the social brain hypothesis, the gossip theory of language evolution and Dunbar's Number (the limit on the number of manageable relationships). His publications include 15 academic books and 550 journal

articles and book chapters. His popular science books include *The Trouble With Science*; *Grooming, Gossip and the Evolution of Language*; *The Science of Love and Betrayal*; *Human Evolution*; *Evolution: What Everyone Needs To Know*; *Friends: Understanding the Power of Our Most Important Relationships*; and *How Religion Evolved*.



Animal photography supplied by Jeffrey Rosenberg and the London Zoo Camera Club

Meetings report

Architecture for people and the planet

On the 20th of October, the Chair introduced Professor Derek Clements-Croome, commenting on his wide-ranging research on environmental health, citing his study of the effects of CO₂ on children's learning in primary schools. We spend most of our lives in buildings with scant regard to design for environmental health and social issues. The United Nations has 17 sustainable development goals (SDGs) but not one for fresh air *per se*. The SDGs were designed to improve quality of life for all but with judicious use of the Earth's resources, the main components being energy, water, waste and pollution. Professor Clements-Croome emphasised the critical importance of air pollution on health and referred to the significant impact of the construction industry on SDGs, with energy accounting for 73% of global greenhouse gas emissions. By contrast, aviation accounts for 1.9% of emissions. Pollution has a huge impact with 1 in 6 Europeans living in poor quality housing - respiratory conditions and eczema account for hundreds of thousands of lost school days. Professor Clements-Croome has just joined the Klosters Forum which brings experts together on an annual basis to discuss and promote positive environmental change. He explained to us about sustainable intelligent buildings and cities, with quality of life being the central component; he feels that intelligence has a bigger span of meaning than the often referred to 'smart buildings'.

Buildings could be quite simple but intelligent. He endorsed the philosophy of Ove Arup the British engineer who read philosophy at university, that collaboration between architects and engineers should be central and mutually dependent. The move to specialism in the Victorian era disrupted this idea. Lessons from history include igloos which Professor Clements-Croome considers to be intelligent buildings as shown by thermal performance studies. Other examples, but from hot environments, include wind towers in Yazd, and the Icehouse of Kerman, both in Iran. Another example was of raised houses on stilts from hot and humid Indonesia. Research by the architect, Renzo Piano (notable for Centre Georges Pompidou in Paris and the Shard in London) investigated buildings of the Kanak people in the Pacific Islands. He used this knowledge to design

the Museum of Noumea, New Caledonia, New Zealand which is low tech and highly intelligent. It is constructed on a narrow peninsula and is a startling set of curved buildings inspired by ancient Kanak heritage but dating from 1998.



*Jean-Marie Tjibaou Cultural Centre by Renzo Piano
Ronenbekermen.com*

Louvres in the walls open according to environmental conditions. Part of the Tjibaou site's message is that modern architecture can learn from the past and offer sustainable buildings in a changing climate. 'Sustainable development' is one of the United Nations goals, albeit way down the list at number 17. Professor Clements-Croome guided us through the way architects have been using innovative design to address the needs of a crowded and polluted planet. Modern design should be predicated on buildings and the environment with integration between people, processes and products. Unfortunately, there has been fragmentation between these elements which, sadly, was illustrated by the Grenfell fire disaster. A way to prevent such tragedies is to reflect on historical experience, such as construction of the great medieval cathedrals where all aspects worked together for their single purpose; holistic thinking is key to success. Professor Clements-Croome also mentioned here how he values his membership of the RSM due to its multidisciplinary environment. Sustainable buildings add value as is clearly shown by statistics of the American Leed Rated Buildings. There are many smart benefits such as saving between 10-50% in energy consumption and lower utility bills. Professor Clements-Croome also stressed the importance of sensory aesthetics in building design. A building can be both functional and beautiful, and a healthy workplace goes beyond

simple comfort. It is important to remember that 90% of operating costs of a business are related to staff, with rent 9% and energy 1% respectively. His work has led to publication in 2018 of *The Well Standard* based on stakeholder input including medical issues, recommended levels of light, of sound and of other environmental factors. His detailed research was encapsulated by the term 'Flourish' incorporating qualitative, quantitative, perceptual and economic elements. The importance of this work was reflected in the costs of absenteeism and presenteeism being around £100bn/year, and as far as ventilation was concerned it was staggering to recall that in 1800 the French pathologist, Xavier Bichat (referred to as the father of modern histology) had referred to CO₂ levels befuddling the mind! Leonardo da Vinci noted that the key characteristics of nature were its optimal use of energy and materials and this has led to the science of biomimetics - the abstraction of good design from nature.

Early examples included the giant water lilies at Kew Gardens and the Great Exhibition building at Crystal Palace in 1851. The lotus leaf effect which facilitated self-cleaning of structures, and the development of Velcro were further examples from nature. Further, we learnt that research on the noses of camels has inspired the development of humidifying and dehumidifying systems, while a group in Barcelona is studying bioluminescence in lemon trees as an alternative to street lighting and studies on moths' eyes have implications for generating electricity! The concept of biophilia was mentioned, the love of nature, with comparisons made between biophilic and non-biophilic office design. Many studies have demonstrated positive impacts on health and well-being resulting from biophilically designed buildings. Other such benefits include offsetting the Heat Island Effect (structures having higher temperatures than the surrounding environment) and CO₂ emissions. Merit in planning biophilic garden cities was mentioned concerning the concept of Lilypads and the Green Mega City, by the Belgian architect Vincent Callebaut. It is important to differentiate between stylistic design such as the armadillo shaped Scottish Exhibition and Conference Centre by Norman Foster and truly organic architecture such as Fallingwater by Frank Lloyd Wright. There are important lessons to be learnt from spiders' webs and the way Bower birds collect objects to attract a mate. Constructions by magnetic or compass termites near Darwin, Australia have inspired the Eastgate office building designed by Arup in Harare, Zimbabwe.



Fallingwater, Frank Lloyd Wright. Wikipedia

In the 1990s the American architect Eugene Tsui postulated the Ultima Tower, a 2-mile-high human termite nest to house 1 million people!

Going forward, significant technologies include AI and robotics, new materials, 3D and 4D printing, the 'internet of things' (such as wearable technologies) and biophilic-biomimetic design, the first 3D office was built in Dubai in 2016. Application of photonics allows for air conditioning without electricity; graphene has many applications including ability to self-repair and wearables are becoming more important in architectural design, with increasing collaboration between architects and neuroscientists. Another advance is artificial leaf technology to generate hydrogen to power fuel cells. Nanotechnologies facilitate self-cleaning and self-healing concrete and also have a variety of other uses. Titanium dioxide coating has been used to clean the cathedral, Il Duomo, in Milan. Phase-changing materials help regulate office temperatures and ground source cooling materials have a huge impact in places such as Abu Dhabi with radiant temperatures dropping from 52 to 37°C.

Professor Clements-Croome concluded with examples and illustrations of futuristic designs, which included 'edible architecture' such as the vertical garden city in Taipei, Callebaut's Asian Cairns in Shenzhen and James Law's cyberecture egg shaped office building in Mumbai. Amongst final questions from the audience was one related to the dearth of advanced buildings in the UK. Professor Clements-Croome felt this partially reflected the short termism of government thinking together with the fragmentation of ideas and skill sets. Professor Clements-Croome indicated that he'd be delighted to deal with any further questions by email: d.j.clements-croome@reading.ac.uk

Jeffrey Rosenberg and Rosalind Stanwell-Smith

Connie Chien's Skin Project

A student named Connie Was Asian and bonny;
In two thousand and one Was her project begun.

She declared: 'For my sins, My study's on skins;
I'll scrutinise faces - Many colours and races'.

'From Hanoi to Hackney I'll ask about acne: 'Are
your worries from spots Slight, moderate or lots?''

'I'll enquire if their lives Are blighted by hives.
'Does your thyroid work well Or is eczema hell?''

"Does diabetes type one Keep you from your
fun?" 'To what lengths shall I go To find vitiligo?'

"Your gender is male And your colour is pale; Do
your problems with skin Affect kith and kin?''

"Please say if your plight is Severe dermatitis;
What triggers your pain, Food, sunshine or rain?''

"Now tell me your tales Of psoriasis scales; Do
they quickly progress When you suffer from
stress?''

Her tact and her skills Gently probed the skin's
ills; As no one could hate her, She amassed super
data.

Seven hundred and fifty Is the number this nifty
Researcher did ask As she stuck to her task.

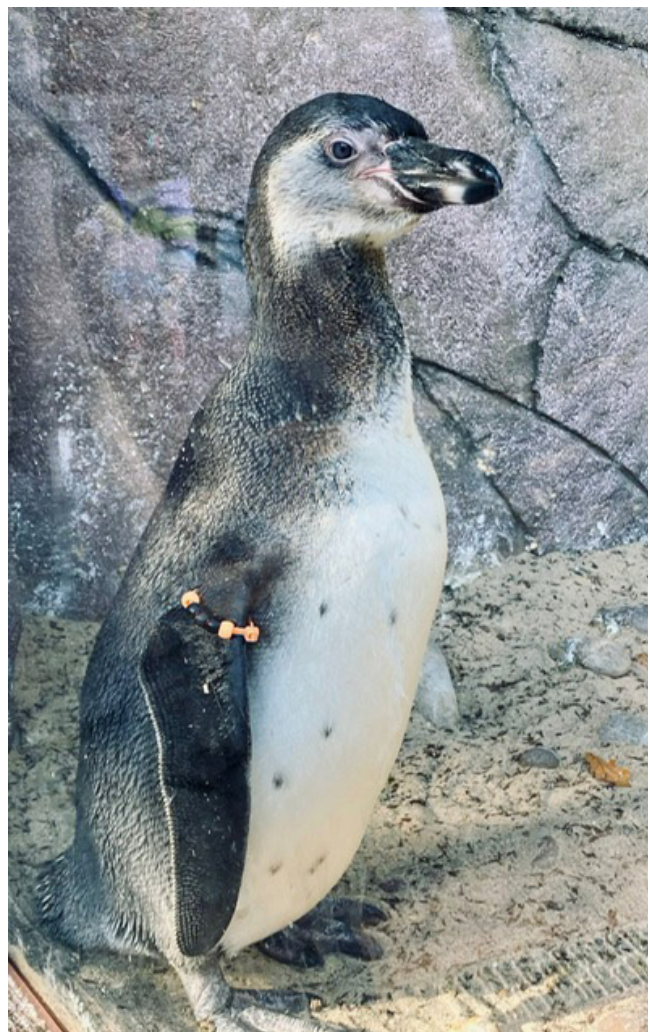
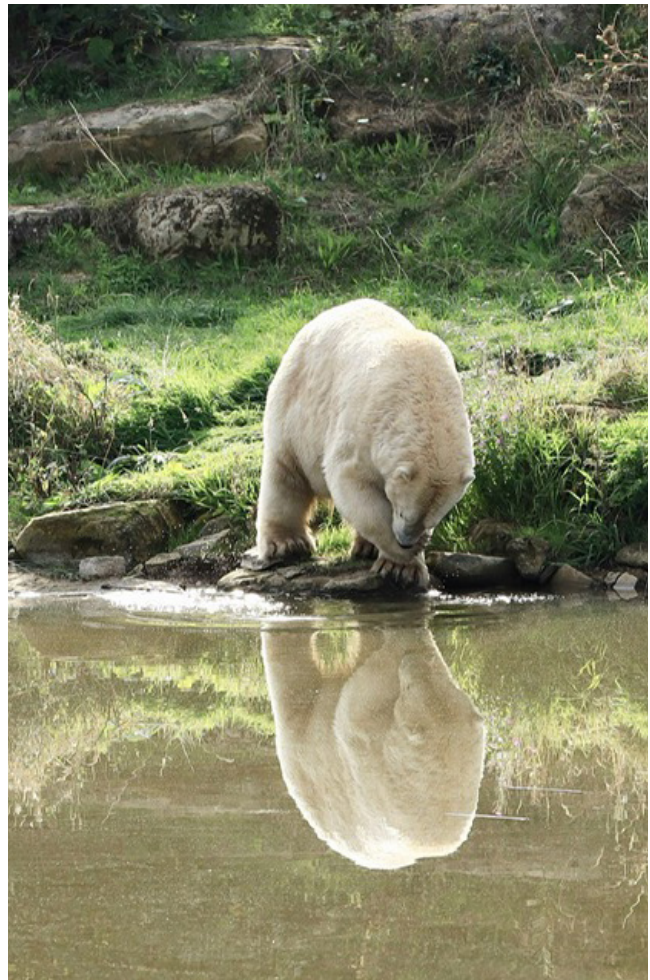
Her thesis displayed Graphs and tables arrayed
But to write many pages Took the young lady
ages.

When printing was troubled, Her efforts redou-
bled, And the staff then remarked: 'What a great
work we've marked!'

Though no medal was given So well had she
striven, Her results on skin patches Were shown
in Dispatches!



Bernard Lamb



Animal photography supplied by Jeffrey Rosenberg and the
London Zoo Camera Club

External Event Report

Walking around Belgravia



St Paul's church



Tiled panel

Our instructions were to meet at Knightsbridge station on 29th June but which exit I asked myself? Soon, we all seemed to make it to the Sloane Street one where we found our guide, Sue Weir and the others, waiting for us. A short walk along Knightsbridge, brought us to our first stop, St Paul's, a Victorian church consecrated in 1843; this elaborate and highly decorated building was the first church in London to champion the ideals of the 'Oxford Movement'. There are beautiful tiled panels around the walls of the nave created by Daniel Beal in the 1870s, depicting scenes from the life of Jesus Christ. Outside, we then walked down the side of the church and turned into what looked like a hotel service area – but as ever we all had faith in Sue, and within minutes, we had walked through an arch into one of Belgravia's lovely mews. At the bottom we found The Grenadier pub; legend has it that it is named after a young soldier who was caught cheating at cards and punished by being beaten to death!

Through a tiny gap in the wall and a couple of minutes' walk, we found ourselves in Belgrave Square full of embassies and a number of institutions, all flying their flags (the day's competition was who could identify the most flags!). Next, we stopped to admire a large statue of Sir Robert Grosvenor - his family having arrived in England with William the Conqueror. In the seventeenth century, Sir Thomas Grosvenor married Mary Davies, a London heiress. Her dowry was the Five Fields of Ebury, a mix of swamp, pasture and orchards, much of it the haunt of highwaymen. Today that land has become what we know as Mayfair and Belgravia, much of it still owned and/or managed by The Grosvenor Estate.



Mews houses



Grenadier pub

Leaving the Square, we made our way to Motcomb Street, passing a branch of C. Hoare and Co, the UK's oldest privately owned bank, founded in 1672. Arriving in Motcomb Street, facing us was the huge Pantechnicon building. Built in 1830s as an art and crafts centre, before being turned into an upmarket warehouse for residents, in which to store finds from their travels around the world. During this time the building's horses and carriages, used to transport furniture, were given the name pantechnicon and so the word 'pantechnicon' entered the English dictionary. We strolled on into Kinnerton Street, a pretty road of small houses and shops. Every now and then there were gaps in the buildings - entrances to small, exceptionally pretty, pedestrian mews. Our (good) hour was up and we thanked Sue for a most interesting and informative walk. We all agreed that we would never have found so many attractive 'nooks and crannies' without her help – thank you Sue.

All photographs by the author.

Janie Strange



Pantechnicon

Articles

Ropemakers!

Richard Pusey



1. George Hawkins, Pusey

Sailing, being a life-time hobby, I have always been interested in ropes and knots - but my interest goes back further, in that the family business on my mother's side was Hawkins and Tipson, a large ropemaking firm on the Isle of Dogs in East London. One of my career options when I was a teenager was to join the family firm but I decided on medicine instead! Twisting natural fibres to form ropes goes back to ancient Egyptian civilisations to about 4,000BC, and then, if one looks at the Georgian maps of East London, the banks of the Thames were lined by many ropewalks, reflected in present day names of many roads, streets and alleys.

Ropes are made in three stages. First, the natural fibre is combed into long threads and then spun into strands by twisting, and finally the strands are twisted in a reverse direction to form a rope - this counter twist holding the rope together. The British Navy required ropes to be a cable in length (600 feet) which during the age of sail was the length for deep water anchoring. To do this, a long ropewalk is required with a spinning machine, slowly travelling on rails drawing out the rope, and a good example still exists at the Historic Dockyard, Chatham which still makes natural fibre ropes mainly for the film industry. My distant great grandfather, George Hawkins (figure 1), was born in Southwark but emigrated to Australia in the 1850s and became

a gold digger in Bendigo, Victoria. The story goes that he discovered gold, 'struck rich', returned to England and went into partnership with a Mr Tipson, a ropemaker. The fortune was used to finance the firm of 'Hawkins and Tipson' in 1892 and a factory was established on the Isle of Dogs, consisting of a mill and three ropewalks. The natural fibre used was manila - imported from the Philippines (figure 2) and most of the customers were London Docks and local shipping. The largest rope ever produced is claimed to be the 'Hercules Rope' made by Hawkins and Tipson (figure 3). Problems arose in the Second World War when Japan invaded the Philippines and the supply of manila was cut off, so sisal from East Africa and Brazil was used instead. I well remember as a child being shown around the factory by my grandfather and being amazed at the ropewalk stretching into the far distance (figure 4) and workers riding up and down on bicycles to get quickly from one end to the other. However, by the 1960s, times were changing and more modern materials were being used. Hawkins and Tipson diversified



2. Philippines manila for rope, Pusey



3. Hercules rope Hawkins and Tipson, Pusey

into synthetic ropes, particularly nylon, and a new factory was established in Hailsham, East Sussex (under the name of Marlow Ropes), also making garden products. A wire rope division was also started in Sunderland under the name of Dawson and Usher. They also researched suture material for surgery. Further problems arose in the 1970s with the closure of the London Docks which resulted in loss of most of their customers, and sadly the main factory closed with the loss of the Hawkins and Tipson name. Profitable sections of the products were 'cherry picked' by other firms although Marlow Ropes is still one of the major suppliers for the yachting industry. Every time I hoist a sail on my boat I think of 'Hawkins and Tipson' and just be glad I went into surgery instead! The footprint of the ropewalk still exists in the form of a wide footpath stretching right across the Isle of Dogs along the edge of Mudchute Park and a blue memorial sign has recently been erected to remind visitors of an ancient skill and a lost bit of our history.



4. The rope walk Pusey

A coat of many centuries

by Peter MacDonald

This stunning late 18th century tartan coat belonging to the Ancient Caledonian Society was secured at auction in 2018 by The Scottish Tartans Authority.



Ancient Caledonian Society coat, MacDonald

Little is known about the Ancient Caledonian Society (ACS) beyond that fact that it was established in London in 1786. That was a few years after the Highland Society of London was founded and it's possible that at least some of the members (the great and the good of Scottish Society) were the same. The ACS appears to have been a quasi-Masonic organisation with Rules that were evidently modelled on those of Freemasonry. It had ceased to exist by 1837, the year in which the Caledonian Society of London was founded, but there were other, later, Ancient Caledonian Societies such as one in Dundee established in 1822.

The coat is typical of late 18th century frock coats and is adorned with thirteen large brass buttons engraved with a thistle surmounted by a crown and surrounded by the Society's name. One button (top left as viewed) is missing as are the two that would have been at the top of the rear vent. The cuffs are fastened by single, smaller and plain brass buttons and there is one larger plain button under the collar. There is no evidence of epaulettes and the purpose of this larger button is unclear. It could possibly have been used to secure a plaid, the upper portion of a traditional kilt that acted as a cloak. The

garment is partially lined with two internal tail pockets but elsewhere the rough seams are visible, not an uncommon practice in clothing of the period. It is likely that it was made in London, along with others for the Society, but there is no indication of the maker. There are no details of what was worn with the coat but given the similarity of the style with that worn by Dr Nathaniel Spens in Raeburn's portrait of about the same time, it's possible that the ACS Coat was worn with breeches. As this is the only known example, it is impossible to know whether this coat with its decorated motif was reserved for the President or some other official of the Society, or whether it was the style worn by all members. It was made for a slim gentleman with a 34-36 inch chest, a narrow waist and shoulders but that was not an uncommon size in the late 18th century.



Dr Nathaniel Spens, by Raeburn

The previously unknown tartan was almost certainly designed for the Society and is unusual in having a decorative silk motif woven into it. On each of the red squares there is a white rose and two buds representing the Old Pretender and the



Ancient Caledonian Society coat, MacDonald



Tartan design, MacDonald

Princes Charles and Henry. The use of such obvious Jacobite iconography only 33 years after the last execution of a Jacobite leader is extraordinary and shows just how safe it had become to make such references without fear of reprisal. Tartan with a secondary design such as the rose motif would have been woven on a Draw-Loom, a pre-Jacquard type loom used for weaving complex patterns. The cloth is narrow, 15-17 inches wide. This type of weft-faced brocade is a technique known as 'Floretta' and was a specialty of the Norwich weavers and it seems likely that the material was woven there. A record exists of a coat like this one being loaned by the Banff Museum to the 1911 Glasgow International Exhibition where it was described as the 'official Dress Coat of the Ancient



Ancient Caledonian Society button, MacDonald

Caledonian Society of London'. What happened to that coat after 1911 is unclear but it was not included in the Museum's 1933 Inventory. Given the rarity of the coat and the fact that relatively few would have been made it is possible that this and the Banff coat are one and the same.

It is hoped that further research will identify the original wearer of the coat. Its importance was recognised by its inclusion in the forthcoming V&A Dundee's Tartan exhibition which will take place April to December 2023.

Peter MacDonald is a tartan historian and Head of Research & Collections at The Scottish Tartans Authority. Constituted as a registered charity in 1995, the charitable purposes of the Authority are (a) to protect, preserve, conserve, promote and explain the culture, traditions and uses of Scottish Tartans and Highland Dress and, (b) to advance and promote the education of the public about Scottish Tartans and Highland Dress and their respective origins, manufacture, use and development.

www.scottishtartansauthority.com

Credit for the painting.

The painting of Dr Nathaniel Spens by Raeburn, is reproduced by the kind permission of the Royal Company of Archers.

What is progress?

Maurice Cohen



Weeks of winter (in Australia) have been quite chilly and I have greatly appreciated the heating cycle of the air-conditioning system; also good to think that in the hot summer days yet to come, it will keep me cool. Modern technology has affected our lives in ways we do not always appear to be aware of. To what extent are we modifying evolution if we are now adapting our environment to suit us? We live safely in our houses; kept warm or cool as required, wear suitable clothing, and have readily available a variety of food obtained without personal risk.

In other fields, new-born babies with congenital abnormalities, that would have resulted in their early death, can now be treated and survive. We have vaccines that protect us from previous lethal diseases, and we have antibiotics that deal with infections. Has evolution, as Darwin described it, come to a virtual standstill? We have the survival of the nearly all - not just the fittest.

The 'lesser fit' now get to adulthood and have families, passing on their genes that would have previously disappeared. What will be the long-term effects on humanity? Perhaps (because of our progressive technology) nothing at all. Or perhaps a society more dependent on personalised medical

regimes to support the different ongoing abnormalities and deficiencies that come to be accepted as a result of modern treatment? Abnormalities that would have disappeared through environmental pressures. We have to ask the question, is what we are doing, giving free rein to technological advancement, the right way to progress human society? But what is progress? Difficult to answer. However, the feeling persists that we are going forward without plans or objectives, or ethical decisions. The latter are so important. We have developed nuclear energy, but also a devastating nuclear bomb. What other catastrophic surprises await to accompany future otherwise benign discoveries?

Unfortunately, human society has not transformed as rapidly as technology, to get together to plan our earthly future in an orderly and reasonable manner. The United Nations has not fulfilled its expectations. Will it? Can it? We humans are not quite ready to make these changes. Different cultures and nationalism still abound with no common purpose. Will we destroy ourselves with our own technology before this occurs? Here we are, using tremendous resources, trying to colonise the moon or Mars, but we are not able to live appropriately on Earth...

Just thinking...

Sustainable intelligent buildings

Derek Clements-Croome

We never just look at one thing: we are always looking at the relation between things and ourselves. Our vision is continually active, continually moving. John Berger 1972 in his book Ways of Seeing

Here Berger is referring to viewing art, but it is also true about how we sense the environment around us and the places we inhabit.

Intelligent buildings have existed for thousands of years, but different centuries and cultures express them in different ways - so what is an intelligent building? It is one that serves the needs of people in functional ways but is also beautiful, not just visually but in the simplicity and sensory ways it achieves these human needs. Examples might be an igloo, a Japanese tea house, the Malaysian house or a courtyard design, but there are many other vernacular types throughout history-each offering ingredients that make up the recipe for what is the essence of an intelligent building.

During his lifetime Henry Wotton published two works: *The Elements of Architecture* (1624), which was inspired by *de Architectura* by Marcus Vitruvius Pollio, executed during his time in Venice and was part of a Latin prose address to the king on his return to Scotland (1633). Wotton shares authorship of the quote *Well building hath three conditions: firmness, commodity, and delight*, with Vitruvius, from whose *de Architectura* Wotton he translated the phrase. Some have termed these conditions or elements as a paraphrase rather than a true translation, and the quote is often attributed to Vitruvius. Today this paraphrase might be durability, resilience, function and beauty. Of course these are basic primary needs but they can be interpreted in various ways. Each building will be nuanced in a particular way according to the way the client and design team interact. A building is a composition, but unlike a music score that is composed by one mind, buildings are a composite of many thoughts from many minds that make up the design, construction and operation team. The personnel constituting the team are varied but are educated in different ways too, and therein lies the source of many problems in that the

basic language of building and architecture is interpreted with different priorities by the various players. Attaining seamless connectivity of thoughts to achieve a vision is not easy but when successful it is very powerful. A cathedral evokes a special feeling within us as soon as we step over its threshold. Just the sight of it has perhaps prepared us but stepping inside our sensory perception reaches deeper into our minds. Architecture and its building can stir our emotions. How and why this happens is a complex but beautiful story and has been a topic of philosophical debate for many centuries. The atmosphere is tangible and even more so if music plays within the cathedral walls because it evokes another emotion in our sensory response beyond the visual impact. For those like myself in the UK who have experienced music in Kings College Cambridge, St Pauls Cathedral in London and the Coventry Cathedral, for example, know how the visual and aural senses in those places evoke our emotions and wellbeing in a heightened way.

Terminology

In the 21st century intelligent buildings tend to be ones that are very technology driven, but already we can see the impact of changes in society in that they need to be designed for health and well-being of the occupants and so bring in a caring and humane approach that offsets the hard faces of construction and technology. Too often an intelligent building is reduced down to the choice of a building management system but there is much more to it than that and that is why I prefer the term 'intelligent' rather than 'smart'. The words intelligent and smart are often interchanged but is this valid? Intelligence is having a good understanding with a high mental capacity to quickly comprehend. It is characterised by quickness of understanding, sound thought and good judgement. Intelligence is the faculty of reasoning and understanding. When a person is inherently intelligent they can also be smart, but a smart person may not be very intelligent by nature. Smartness comes from responding to the situation or circumstances being experienced. There are

three types of intelligence which recognise cognitive, emotional and practical reasoning and abilities. Smartness concentrates more on cognitive intelligence whereas most decisions in life depend on a mixture of all three types of intelligence. We can conclude that an intelligent building has a higher level of expectancies than a smart one. It has to enhance health and wellbeing by providing a wholesome sensory experience; it has to be sustainable in its use of resources but it also needs to be smart to deal with quick changes of demand in temperature, ventilation or lighting for example. Digital technology can enable a building to be smart. The Olympic Edge Building in Amsterdam with its 15,000 sensors might be an example of a smart building but it also embraces other features which show it to be an intelligent one too. Alternatively, a low tech building can be effective using passive control. Measures like building form, orientation, mass and materials respond to changes in a more natural way. An igloo for example is an intelligent building in the arctic context. We can see that intelligence is a more embracing term than smart and hence the use of these terms needs to be differentiated.

Philosophy of Ove Arup

Ove Arup wrote about the theory and practice of design throughout his life. Central to his thinking was the notion of total design which advocated closer collaboration not only between architects and engineers but across the whole building supply chain. His firm founded in 1938 became a test bed for this design philosophy. He believed that a design should be developed by individuals with diverse skills coming together from the beginning of the project. Traditionally engineers were not involved in the early stages of design. He believed that the architect should be part an engineer and the engineer should be part an architect in order to achieve a fruitful collaboration. We see this creed being continued not only in practice but in the growing trend towards university degree courses in architectural engineering today.

General

Can Intelligent buildings provide alternative and more sustainable approaches to heating ventilating and air-conditioning of buildings? Lessons from history as well as the natural world

show us that they can. Throughout history clean air, sunlight, sound and water have been fundamental to the needs of people. Today, sensitive control of these needs may use either traditional or new solutions, or a blend of these, but we have to remember that the built environment is fundamental to mankind's sense of well-being and it is the totality of this idea that we need to understand and value even in this low carbon economy age. Intelligent buildings respect these values for the individual, the business organisation and for society, and we can learn a lot about intelligent buildings by looking at the history of world architecture and seeing how people have adapted buildings to deal with the rigors of climate and the changing face of civilisation.

There are also lessons from nature because animals and plants have evolved to use materials and expend energy optimally in the various changing and dynamic environments across the world whether in deserts, arctic regions, hot-humid, hot-dry or temperate climates. Similarly, buildings are now having to absorb the impact of the technological age, but the implications of climate change and the need for healthy working conditions are now dominating our thinking as people become more knowledgeable about the impacts of the environment, not only on ourselves as individuals but also in the context of communities locally and globally recognising that society's expectations and priorities are changing too. Intelligent buildings should be sustainable, healthy, and technologically aware, meet the needs of occupants and business, and should be flexible and adaptable to deal with change. The life cycle process of planning, design, construction, commissioning and facilities management including evaluating the building, which is referred to as post-occupancy evaluation (POE), are all vitally important when defining an intelligent building. Buildings comprise many systems devised by many people, yet the relationship between buildings and people can only work satisfactorily if there is an integrated design, construction and operational team possessing a common holistic vision by working together from the commencement of a project.

This means that planners, consultants, contractors, facilities managers, manufacturers and clients must share a common vision with a set of intrinsic values, and must also develop a mutual understanding of how the culture of

an organisation with its patterns of work are best suited to a particular building form and layout and served by the most appropriate environmental systems. A host of technologies are emerging that help these processes, but in the end it is how we think about achieving responsive buildings that matters. Intelligent buildings can cope with social and technological change and should be adaptable to short-term and long-term human needs. The design brief must reflect this vision and understanding.

We need to consider how buildings affect people in various ways. They need to be expressive as well as being functional. The environments they create can help us work more effectively because they can present a wide range of stimuli for our senses to react to besides satisfying our primeval needs of warmth, safety and security. Intelligent buildings are designed to be aesthetic in sensory terms including being visually appealing; they are buildings in which occupants experience delight, freshness, a feeling of space, they should invite daylight into their interiors, and should provide a social ambience which contributes to a general sense of pleasure and improvement in mood. Of course the culture, management and job satisfaction are key, but this does not subdue the importance of the built environment. Buildings consume a great amount of energy and water in their construction and during their total life-cycle. They use large quantities of materials and aggregates and generate waste and pollution at every stage of their production. It is no longer acceptable to consider a building and its systems in isolation from its social impacts. This becomes critical with the growth of megacities which is part of a rising trend towards urban living. Modern liveable cities comprise intelligent and sustainable buildings and infrastructures however they should be designed to show respect for the natural environment and the health of the inhabitants. In other words, sustainable and intelligent cities are composed of buildings supported by intelligent infrastructures created for the well-being of residential, commercial and industrial communities.

The key criteria for achieving good quality intelligent buildings are:

- Satisfying client and users in a sustainable manner is the main objective for supply stakeholders

- Meeting social and community needs
- Respect for health and wellbeing of occupants
- Recognition of available resources

An intelligent building starts with a comprehensive brief and should have:

- A clearly articulated project holistic vision and mission
- A recognition of the planning, design and procurement realities
- A whole-life value approach
- An embedded monitoring system
- A comprehensive operating system for the building in use

The creation of shared visions, effective teams, clear structures and robust processes ensures that the intelligent building being constructed will demonstrate the purpose for which it was conceived. As we move towards sustainable futures there needs to be a long term outlook by the project team. It is no longer valid to just think short-term, about change brought about by societal pressures as well as the technology we create. We need Intelligent buildings for humanity as well as being functional together with being economic and resource efficient. They are our 21st century signature to a better kinder world in which health well-being and happiness can be integral in our planning design and management thinking. Intelligent or cognitive buildings should be ones providing flourishing environments for people to thrive in. Many of the ideas discussed apply to older buildings being refurbished as well as new ones. Too often there are barriers which make achieving these ideals difficult. Short termism, a lack of design thinking time, silo thinking and an over conservative outlook are some of the issues.

Deconstructing Intelligent Building

One can often deepen ones understanding by deconstructing ideas then reconstructing them. The nature of buildings was described by Francis Duffy (formerly of DEGW One Partnership and President of the UK Royal

Institute of British Architects 1993-95) when he likened a building as to being composed of several layers of components. He distinguishes four layers, called the Shell, Services, Scenery and Set. The Shell is the structure, which has a lifetime of about 50 years or more; the Services are all the systems covering power, digital, air, water and transportation, having a lifetime ranging from 3 to 20 years; Scenery is the layout of partitions, including false ceilings, which change about every 5-7 years; Set is the furniture and contents, which can be changed every few weeks or months even. Brand (in his book *How Buildings Learn: What happens after they're built*, Penguin, 1995) interprets these factors and recasts them in terms of six S's, but here I have added Senses, Spirit and Soul:

Site - the geographical setting

Structure - the foundation load-bearing elements

Skin - exterior surfaces

Services - operational systems of a building, including information technology and communications systems

Space plan - the interior layout

Stuff - the contents including furniture

Senses - the human being

Spirit - the joy and mood induced by a place

Soul - the aura felt in a place

Buildings and their interiors should evoke a sensory experience and the quality of that experience will depend on the interaction between the individual and the building together with the environment that the building creates. Pallasmaa (1996) gives an elegant exposition about how architecture touches our perception of the world around us.

Architecture is essentially an extension of nature into the man-made realm, providing the ground for perception and the horizon of experiencing and understanding the world. It is not an isolated and self-sufficient artifact; it directs our attention and existential experience to wider horizons.

Architecture also gives a conceptual and material structure to societal institutions, as well as to the conditions of daily life. It concretises the cycle of the year, the course of the sun and the passing of the hours of the day.

Juhani Pallasmaa in *The Eyes of the Skin: Architecture and the Senses*

Over 50 years there can be three generations

of services and ten or more generations of space plan changes, also continual updating information and communication systems, resulting in costs much higher than for the original building. The layering also defines how a building relates to people. The building interacts with the occupants at the levels of the Senses, Spirit, Soul and Stuff; with the tenant organisation at the Space Plan level; with the landlord *via* the Services that have to be maintained; with the public *via* the Skin and entry to the building; and with the whole community concerning the plan and size of the Structure and the Site access. Occupants use the building and its systems in different ways depending on their use patterns of behaviour, lifestyle and expectations. Occupancy behaviour gives rise to the largest differences between patterns of consumption of energy or water for example.

Brand considers that one design imperative is:

An adapted building has to allow slippage between the differently paced systems of Site, Structure, Skin, Services, Space Plan and Stuff.

To this one has to add the impact of people's behaviour on the buildings performance. Buildings are subject to technological and sociological change. Alexander has posed the question, *What does it take to build something so that it is really easy to make easy little modifications in a way that once you have made them, they feel integral with the nature and structure of what is already there?* (refer to his books *The Timeless Way of Building* 1979 and *A Pattern Language* 1977, both published by Oxford University Press). Age plus adaptability makes a building come to be loved. The building learns from its occupants and they learn from it. People like to have some control over their environment and also over the way that the building can be rearranged to deal with changing needs. Old, cheap buildings offer high adaptability and opportunities for high-risk, creative ventures to be housed with little capital (Thorburn 2003). Brand describes how the electronics firm Hewlett-Packard was founded in a garage in 1939 in California, with a \$538 loan from their electronics teacher. Low rent space leaves tenants free to improve the space to suit their needs. Constant revision is the fate of the institutional and expensive buildings, but even they can be designed in an adaptable,

loose fit way to suit whole life expectancies. Kincaid (2002) ushers a note of caution about intelligent buildings and their tendency to be judged by the levels of system integration that they demonstrate. He argues that this approach can limit the adaptability potential of sustainable intelligent buildings. He goes on to suggest that the capability for re-differentiation or flexibility allows systems to be reconfigured and this will enhance the adaptability of the building and eases the problems of managing the information and communication technology systems.

Cathedrals appear to be monumental and impervious to change. The exterior of Salisbury Cathedral looks much as it did in 1266 yet, as Brand describes, the tower and spire were added in the 14th century; in 1754 the original choir screen was removed; in 1865 the original screen and old organ were replaced with a new screen and a new organ; in 1929 the organ was removed and the screen demolished to be replaced by an open metalwork one; in 1965 the screen was removed entirely to give an uninterrupted vista from end to end. What will be the next change?

Sir Richard Rogers, in an essay entitled 'The artist and the scientist', published in the book *Bridging the Gap* (New York: Van Nostrand Reinhold 1991) wrote:

One of the things that we are searching for is a form of architecture which unlike classical architecture, is not in the finite upon completion, we are looking for some architecture rather like some music and poetry which can actually be changed by the users, a kind of architecture of improvisation.

Architecture, like music, needs a technical resource to function in a myriad of ways, but at a higher level it requires interpretation which will ignite the spirit of the users.

The nature of aesthetics is wider than generally supposed. There is the direct visual aesthetic but there is also a sensory aesthetic which relates to the invisible. So the sounds to hear, feel to touch, the smell of the atmosphere in the building are part of the aesthetic. Freshness is one attribute of aesthetic, for example, and is a word which can apply to colour (visual sense),

air quality (sense of smell also air movement), one's sense of space or the degree of tidiness. Often people feel better when they declutter a space. The cover of the book *A New Way to Cook by Sybil Kapoor is Sight, Smell, Touch, Taste Sound* again reflects the power of our senses in all we do. Professor Charles Spence in the Experimental Psychology Department at the University of Oxford researches gastrophysics which he refers to as multisensory dining. This cross sensory modal approach is true when we experience the environment the building creates and is the root of the flourish approach to assessing our state of health and wellbeing. Aesthetics are also about how a building adapts and matures over time. How were the aesthetics of a Georgian building viewed in the eighteenth century in contrast to how they are seen today? There is an aesthetic which is linked to words such as mature, durable and mellow. There is an innate aesthetic which develops with time. Buildings cannot learn if they do not last. Old buildings embody history. Old buildings give a glimpse of it. There is also a social and environmental aesthetic reflecting how well the building communicates with people inside and outside. People often ask me to state my favourite intelligent building. Not an easy question to answer.

Both The Notre Dame du Haut Chapel by Le Corbusier and the Falling Water Home by Frank Lloyd Wright inspire me in various ways but I often refer to the Jean-Marie Tjibaou Cultural Centre on the Tina peninsular in the Pacific near Noumea by the Renzo Piano Building Workshop Studios (RPBW). It is a low tech and low maintenance building in which the culture of the Kanak people of former times serves as a starting point to the design because they knew and understood how to deal with the regional climate and the moods of the Pacific Ocean nearby. The Centre is a cluster of 'huts' or small pavilions and tree-filled spaces. It is located on a spit of land called the Tina Peninsula, surrounded by water on three sides. The site's lush vegetation is cut through with trails and paths, amongst which there are 'villages' which are clusters of buildings with strong ties to their context, their semicircular layout defining open communal areas. The structure and above all, the functionality of the (pavilions) were reproduced and adapted, architecturally as well as socially. There are ten huts, of three different sizes, from 20 to 28 m in height, all interconnected by a footpath. Within

the Cultural Centre these huts serve various functions. The first group comprises exhibition spaces, a second series of huts houses research areas, a conference room and a library. The last series of huts contains studios for music, dance, painting and sculpture. The tall curved iroko wood shields that form the pavilions have adaptable louvres that protect the Centre from the ocean weather but also let the local breezes naturally ventilate the spaces. Iroko wood was chosen because it is termite proof. The concept shows beauty in simplicity but it also displays practicality and functionality. The facades of the pavilions are part of a passive ventilation system which control environmental conditions in what is a humid semi-tropical climate. The double outer walls allow air to circulate between the two layers of slatted wood.

The apertures in the external shell have adjustable louvres to take advantage of winds to circulate the air around the building using the stack effect. In contrast the Olympic Edge in Amsterdam is a high tech building but is also focused on the user and being sustainable. The building minimises environmental impact but also creates inspiring spaces for people to work. It uses a digital infrastructure to connect everything and everyone to a single cloud platform. It consumes 72kWh/m². Energy supplied from solar panels with geothermal storage. It has a green roof and optimises the glass and the façades. 15,000 sensors measure environmental quality. The spaces are filled with natural daylight and have circadian lighting systems. The spaces have been carefully spatially planned and are rich with greenery.



Olympic Edge building, Amsterdam - Credit: Frank Jansen (Edge) photographers Ossip van Duivenbode and Tillemann



Model of a pavilion for the Cultural Centre shown at the Royal Academy Exhibition in London September 2018 (photo: author)



People visiting the Cultural Centre (Credits: RPBW Studios; Photos by Kanak)



*Olympic Edge Amsterdam, Interior
Credit: Frank Jansen (Edge) photographers Ossip van Duivenbode and Tilleman*



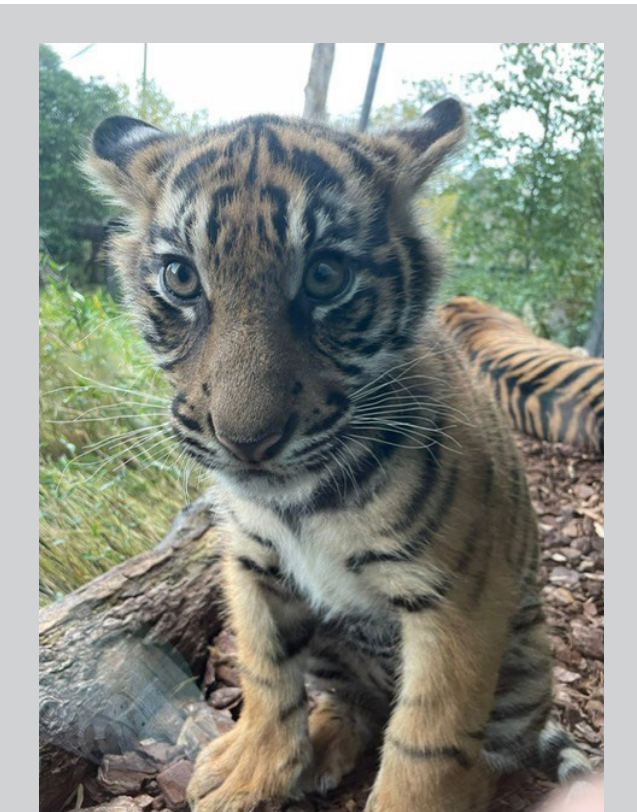
*Olympic Edge Amsterdam, Interior
Credit: Frank Jansen (Edge) photographers Ossip van Duivenbode and Tilleman*



Olympic Edge Amsterdam, Interior
Credit: Frank Jansen (Edge) photographers Ossip van Duivenbode and Tilleman



Olympic Edge Amsterdam, Interior
Credit: Frank Jansen (Edge) photographers Ossip van Duivenbode and Tilleman



Animal photography supplied by Jeffrey Rosenberg and the London Zoo Camera Club

Some practical realities

Building maintenance has had little status except where safety is compromised and yet preventive maintenance not only costs less than repairing building failures, it also reduces human wear and tear. Occupants become frustrated by systems that continually breakdown; buildings become non-sustainable and wasteful. Commissioning is another stage of the design process which is often neglected. Post-occupancy evaluation and continual commissioning are spoken of but too often not done although this is now improving with the more recent emphasis on the health and wellbeing of occupants. The President of the American Society for Heating Refrigeration and Air Conditioning Engineering (ASHRAE) in 2019-20 writes about achieving operational excellence in a paper emphasising the need to recognise the close performance relationship between the building and people (ASHRAE Journal, Volume 61, August 2010, pages 14-18). He calls on us to think and act differently which I leave as a message if we are to achieve sustainable liveable buildings. Brand (1995) quotes Sydney Opera House, finished in 1973 and universally recognised as a symbol of Australia. It cost \$120 million with a cost overrun of about 1700%.

The magnificent roof shells were designed to last 300 years and yet the waterproof joints between them were sealed with mastics that have a projected life of 12 years with no sensible provision made for inspection, maintenance or repair. In 1989, it was estimated that the Opera House would need \$100 million to replace them. Why did that happen? Probably for several reasons. Was there a lack of systems and long-term thinking, or is it that the innumerable changes that inevitably take place during a building project cannot be accounted for by existing quantitative and qualitative processes? The three things that change a building most are economic and fashion markets, money and weather (temperature, moisture, water, frosts). To protect a building over a long period one needs to protect it from markets and weather by maintaining it. Money should be sufficient to maintain the building so that it can run efficiently and effectively for its intended purposes and to provide for renovation, but sadly too often maintenance budgets are seen unwisely as an opportunity

to reduce costs in the short term. The facilities manager has an essential role to cover the planning and design related to construction and renovation; coordinating changes of facilities and relocation; developing facilities policies; long-term planning; building operations, maintenance and engineering; furnishings and equipment and inventory management; real estate procurement, disposal, reuse or recycling; post-occupancy evaluation and continual commissioning. Offices offer a very good building type to study how buildings learn to take change continually. Open-plan and landscaped offices were developed in the 1960s. Then followed a second wave of innovation in office furniture.

Purpose-built partitions are easily linked; purpose-made work surfaces and storage devices became common and were suited to the open office environment. The nature of the open office environment was emphasised by the arrival of information technology which needs replacement practically every 3 years. This and sociological changes have altered the concept of the workplace. In 1972, the fuel crisis started off an ever-increasing interest in energy and its consumption in buildings as well as in other sectors. New office buildings were sealed tightly with tinted windows or were double and triple glazed; tighter control was enforced by building management over lighting and ventilation and air temperature. Money was saved, public credit was taken for energy conservation and people became subject to building sickness syndrome owing to being sealed in with chemicals outgassing from the carpets and building materials, which is still common.

But this is not enough because water, waste management, pollution and health and well-being are as equally important considerations as energy. Depending on attitudes to climate change in all the cultures across the world, different priorities are given to sustainability but a united global effort is needed to fulfil the challenges it gives nations and us as individuals. The intelligent building became dominant in the 1980s. Integration of climate control, fire services, security, lighting, heating, ventilating, air-conditioning and communications were all managed by a computerised integrated network. But vernacular architecture makes us pause and think. In all the increasing complexities of technology and changing

social expectations we have to remember that simplicity is reliable, durable, gracious, elegant and natural. Human values are always overwhelmingly important however sophisticated the technology. It is the people who use the space who understand best how it can be altered to have the character of being conducive to the work being undertaken. Materials and structural systems can be used which invite change and allow changes to accumulate. According to Becker in his book *The Total Workplace* (Van Nostrand Reinhold 1990), adaptability can be over-specified. He quotes the City of London Lloyds building (1985) as a case where the building is intended to be over-adaptive. The cost was £157 million and it was reckoned in a 1988 survey that 75% of its occupants wanted to move back to their old 1958 building. The building was high-tech on a very large scale but was oblivious to the individual worker and work group, according to Becker even though workplaces had a high degree of control.

The buildings services were installed on the outside of the building, as they had been in 1976 for the Centre Pompidou in Paris, in order to open up interiors for flexible space planning, but this led to an attractive but expensive exterior with high maintenance costs. In contrast, the Chrysler building (1930) and the Empire State Building (1931) in New York have proved adaptable, although it is not clear that this was originally intended. Their high ceilings, shallow depth and openable windows allowed flexibility in subsequent replanning of the interiors. More recent upgrading of the Empire State Building has led to a more energy efficient building. Since Becker's time younger generations may be more content in the iconic Lloyds building. Brand (1995) shows many examples where buildings at the Massachusetts Institute of Technology (MIT) in Boston have proved flexible. It is reckoned that the success of the MIT buildings is that it recognised that an abundance of natural daylight, controlled ventilation, good fire control and low energy consumption gave added value, an issue which is only more recently coming to be understood. Providing healthy environments should be seen as an investment not as an expenditure. Good design and management of buildings with low energy demands tend to produce healthier buildings for example. Capital cost outlooks

do not respect these approaches and yet we know the flow of natural light through a building has a fundamental effect on the health and sense of well-being so windows are very important for this and a range of other reasons. More fundamentally sustainability means sustaining for future generations which can only be achieved with long term outlooks. Brand believes scenario planning leads to a more versatile building because it takes advantage of the information developed by programming (detailed querying of building users) and offsets the common tendency to over-specify without properly understanding user needs.

Buildings are treated in a strategic way and scenario planning and programming stimulate the design process so that a strategy can be formulated. This intent is conducted through the design and construction phases and ultimately through to the occupancy of the building. I have emphasised that there has to be a common vision. Priority issues have to be understood. Integrated logistic support systems are common in naval architecture, aerospace, nuclear and defence industries; a lot can be learnt by studying them and applying some of the principles to buildings in order to reduce waste streams in the design and construction processes. The value of virtual reality is that designers and users enter and walk round computer-displayed models so that alternatives can be quickly reformed and different arrangements put into place. These processes can be helped considerably by feedback from post- occupancy evaluations.

Coda

James Gleick in his book *Chaos* (New York: Viking 1987) states that simple shapes are inhuman. Mandelbrot was the inventor of fractal geometry (Mandelbrot 1977 and 1982 *Fractals: Form, Chance and Dimension*; also *The Fractal Geometry of Nature* both published by W H Freeman and Co.) and wrote an explanation about this. Simple shapes fail to resonate with the way in which nature organises itself or with the way that human perception sees the world. Physical architecture has immense detail; different scales draw one's attention and stir the imagination. The architectural composition changes as one approaches the building and sees details in which new elements of the structure come into play. People appear to be happiest in a building where change occurs

at every scale in space and time. There is a resonance with human reactions if these layers of scale can be felt. The analogy with the onion is appropriate: peel back the layers and reveal simplicity and depth simultaneously. The layers in the built environment created by the building designed and operated by people for people affect our outer and inner selves in more subtle ways than we have realised previously.

Some Recommendations

Plan and design with an integrated team so that there is a commitment to the project from all stakeholders and set a clear vision and mission which increases the motivation of the team

Apply systems and a holistic systems thinking approach.

Consider the impact of the built environment on occupants and communities.

Occupant's behaviour has a significant effect on the consumption of energy and water besides the generation of waste so it is important to increase the awareness of occupants to their impact on resources. Aim to increase the build asset value by designing for sustainable operation; flexible and agile spaces; health and well-being.

Monitor using smart metering and wireless sensor technology

Develop data management systems to give feedback on the performance of spaces in the building. Measure the interaction between the building, the systems and the occupants using the latest wireless sensor systems including wearables.

Design for a degree of personal control of the environment.

Use a whole-life value approach to economic evaluations.

Use technology as an enabler but aim for simplicity rather than over complicated systems but ensure interoperability is in place as connectivity is vital to effect smooth continuous operation.

Remember efficiency does not guarantee effectiveness: you need to consider both when designing systems.

Design beyond the expectations defined in codes and regulations

Keep abreast of relevant fields of knowledge and innovation which may be occurring in other sectors. Learn from other disciplines across sectors.

Think of an intelligent building as an organism responding to human and environmental needs. Biofacades are emerging where living and non-living elements are coexisting.

Futures

Now and in the future there is and will need to be consideration towards the influences that buildings have on society, the local community and future generations. For this we will need to consider the environmental, social and economic impacts of buildings throughout the total process of design, construction and operation whether new or old buildings. Whole life value in which quality and whole life costs are assessed is paramount if we are to think long-term and meet growing sustainability demands. Emerging technologies can help in the process. However, this does not mean a project has to be starved of human considerations after all improving the quality of life is a primary basis for sustainable development. The importance of social value seeks to encourage a change in the way we think and make decisions about designing and managing buildings.

Reference

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Animal photography supplied by Jeffrey Rosenberg and the London Zoo Camera Club

Genius and (but) an ancient description of what might now be called Asperger syndrome

A legend says that from time immemorial there was a valley in the heart of the desert of the Arab peninsula. That valley was called the Abker valley and was believed to be inhabited by spirits (gin in Arabic singular, ginni); some were good, many were not. Anything pertaining to that valley was called Abkery, a word standing for genius in Arabic. The Arabic word ginni seemed to have been adopted by western language as genie since genie resembled the Arabic word by sound and sense - and from it the word genius was derived (1,2). The Arab thought, thus, the highly talented particularly if eccentric or of rather odd mentality, to be a description which now fits the condition called Asperger Syndrome. They thought of someone who had a genie from that valley, a genie capable of granting wishes when summoned, a genie which taught them how to be the talented (genius) they were. Thus the word genius describes the highly talented both in the east and the west.

Abdulhamid Alabbasi

(1). Stevenson A. and Waite M (eds), *Genie and Genius in Concise Oxford Dictionary*, Oxford University Press, 2011 p594

(2). Bradley H. *Genie, Genius in JAH Murray (ed), A New English Dictionary On Historical Principles*. The Clarendon Press, Oxford, 1908 p111,113



Book review

Commentary

Florence Nightingale: conceivably a secular saint, but not the saviour of the army during the Crimean War, 1854–1856

Mike Hinton



In his review of Mark Bostridge's impressive biography on Florence Nightingale in this journal, Jeffrey Rosenberg was kind enough to mention my book on the medical aspects of the Crimean campaign, and how catastrophic collapse of the health of troops during the first winter of 1854/55 were resolved. I presented a detailed analysis of the data in the official Medical and Surgical History published as a House of Commons Parliamentary Paper, and other primary sources, and concluded that the contribution that Nightingale and the government sponsored sanitary commissioners was much less than Nightingale's many

admirers would wish to believe. Interestingly, and reassuringly perhaps, Bostridge came to the same general conclusion although by a very different line of enquiry. He wrote on page 249: 'A [...] notion, prevalent among an older generation of historians, [and] found in popular historical writing today, is that the dramatic decrease in mortality at Scutari in the first months of 1855 is directly attributable to Florence Nightingale herself. This was transparently not so.' In like manner, Clive Ponting in *The Crimean War: The Truth behind the Myth* (pp.194–5) surmised: 'She did not institute many of the reforms ascribed to her [...] in medical terms she accomplished little [...] apart from providing basic comforts'. These modern day conclusions echo that of the PMO of the British Fleet, Deputy Medical Inspector David Deas – who had no formal dealings with Nightingale as the Navy was quite separate from the Army – when he informed the Director General of the Naval Medical Department on 19 February 1855 that, though he admired Nightingale, he saw: 'dozens of things placed at her credit which [...] she had nothing to do with; but such is the fashion of the day [she] now gets credit for having both suggested and executed;' and this was also broadly confirmed by Nightingale herself as the following extract from Gillian Gill's book *Nightingales*. Florence and her Family (pp.383–4) attest: 'As Nightingale told Sidney Herbert unequivocally, Scutari was only a symptom of the army's malady, not a cause, and once things began to improve at Balaclava, things improved at Scutari. Once the men on the plains below Sevastopol began to get better food and the weather became warmer, their strength increased, they became more resistant to disease, the number arriving at Scutari went down, the wards became less crowded, and the medical personnel were under less pressure.' In his review Jeffrey Rosenberg noted that Bostridge pointed out that after the war: 'Nightingale might have suffered from chronic



Henry Hering (1814-1893), Public domain, via Wikimedia Commons

brucellosis, rather than some psychological disorder'. This assertion was based in part on the conclusions of DAB Young in a 1995 paper in the BMJ. It is possible that she may have contracted the infection in the Crimea. However, from the knowledge of hindsight there is surprisingly little convincing evidence from the clinical descriptions of fevers in the Medical and Surgical History that brucellosis was prevalent in the troops in the Crimea. This was possibly because milk and cheese did not form part of their regular rations, though they could have been obtained – at a price – from the sutlers trading in the bazaars near the camps. In his monograph *Crimean Doctors* (p.318) John Shepherd concluded that because fever was merely a symptom labelling them on 'purely clinical observations' makes for a classification that is 'utterly confusing', and how right he was! It is almost impossible to ascribe the diagnoses listed in the official returns to any specific disease; though in all probability typhoid was

responsible for most of deaths from fever recorded during the campaign, with typhus, which had a higher case fatality rate, being very much less common. It would be unwarranted to imply that the talented and well-connected Nightingale was not extremely influential and many people the world over have benefited in one way or another from her later achievements. Similarly, it would be churlish to suggest that the sanitary commissioners did not play a part in the scheme of things. However, the principal cause of the high mortality recorded at Scutari was the need to evacuate large numbers of seriously ill and wounded patients who had a poor or hopeless prognosis.

The health of the Army began to improve during the early months of 1855 prior to the arrival of the commissioners; and this was due to upgrading of living standards and by development

of more comprehensive health care near the front. Patients thus had improved prognosis and rates of mortality then fell dramatically in both the Crimea and the evacuees. These welcome developments were not achieved by one person or a group of individuals but rather by many people working, often unwittingly, towards a common goal. That said, it would seem appropriate to leave the last word to Major J. Bennett, RAMC, who, in a booklet published by the Florence Nightingale Museum Trust in 1991 entitled *Redressing the Balance*, opined that any questioning of Nightingale's personal contribution should not 'detract from her' rather they should 'remind us that other people were contributing to reform.'

Watching us?

Woke up this morning, looked out of the window, there was a rainbow - never ceases to amaze and delight. Also reminds us of human limitations. We don't see all the colours. Same as we don't hear all sounds or smell all smells; not as well as dogs. We probably don't fully sense all there is around us, similar to other animals. Industrious and well-organised bees and ants don't seem to be aware of us watching them. Darwin tells us that we have evolved with those abilities best suited for our survival in the given environment, not for seeing, hearing and sensing all around us. So, when watching worms, bees, or ants, and noting their ignorance of our presence; just wonder who or what may be watching us and noting our ignorance of their presence.

Just thinking...

Maurice Cohen



Animal photography supplied by Jeffrey Rosenberg and the London Zoo Camera Club

Information for Authors

There are three issues per year of the Journal of the RSM Retired Fellows Society, which appear in April, August and December. Articles may be submitted at any time, and accepted ones are compiled into the next available issue space.

Each manuscript should bear the title of the article, name, address and email address of the author. Please write in Arial Narrow, 12 point, 1.5 spaced and do not justify the text. Spelling needs to conform to the Oxford English Dictionary.

Text **MUST** be submitted electronically, as a fully editable Word document.

Authors also please be sure to complete your submission with your name on it.

Accepted articles for the *Journal*:

- Solicited articles, on a topic agreed with the editor, and should be 1,500 to 2,000 words in length.
- Articles submitted by readers - 500 to 1,500 words.
- Reports of presentations at meetings of the Retired Fellows Society - 500 to 1,500 words, the author invited by the Chair of the corresponding day.
- Reports of extramural events of the Retired Fellows Society - 500 to 1,000 words, the author invited by the leader of the event.
- Reports of Retired Fellows Society tours - 1,000 to 2,000 words, the author invited by the leader of the tour.
- Short 'fillers', text and/or photographs. Poems, quotes, amusing items, brief - under 200 words.

Imagery:

With reference to submission of images (which is encouraged), it is important that each image is accompanied with a title, description and photographer acknowledgement.

Photographs should be uploaded digitally and be as high resolution as possible.