

Presidents Address 2009

7 out of 7

Our Challenges

We are living in interesting times. On the one hand we have the growing certainty of climate change, on the other we are in a recession the like of which we haven't seen since the 2nd World War. It is against this double challenge I take up the role of leading our Institution for the next year.

One of the real challenges of climate change is that although we understand what it is and how catastrophic the effects might be, when we wake up in the morning the world doesn't feel any different. We see natural disasters reported on the world news, Hurricanes, Tsunami's, Floods, Drought but when we leave the front door the world looks the same. Indeed when we were hit by snow this January you could be forgiven for thinking that the world was cooling. The effects are long term and so are the solutions. We know the planet is warming, a fact that has been backed up by scientific evidence over six continents. If this continues at its current rate then we will see greater desertification of the sub-African continent and a rise in sea levels of 0.7m by the end of the century. That's not in my lifetime, and not the lifetime of my children, but it is in the lifetime of my grandchildren and is not a legacy I want to leave them.

In January this year a missing piece of the climate change jigsaw was put in place with the first clear evidence that Antarctica is warming, like the rest of the southern hemisphere. Published in Nature, analysis by US scientists shows temperature rises over much of the iced continent, but most intensely over the West Antarctic ice sheet. Temperatures on the continent's surface rose by an average of 0.1 degrees in the past 10 years, but much of West Antarctica warmed at the much faster rate of 0.17 degrees per decade. The British Antarctic Survey has warned that atmospheric warming on the Antarctic Peninsula is the result of human activities. In addition, in an area of West Antarctica roughly the size of Texas the ice sheet is thinning rapidly. Although the cause is not yet fully understood, it may be a consequence of human-induced climate change. In short, Antarctica is melting more rapidly now than in the past. New research, which looked at the relationship between the global temperature and the sea level over the last 2000 years indicates that sea levels could rise by a meter in the next 100 years: three times the predictions from the UN's Intergovernmental Panel on Climate Change, IPCC. The consequences of this could be the flooding of 2.25 million square kilometres worldwide, affecting well over 100 million people across the six inhabited continents, with over half the flooding in Asia and North America.

Antarctica can now be added to the official list of continents affected by global warming, so that's 7 out of 7.

What about our second challenge? Who would have thought that America's 'Sub-Prime' problem would trigger a global economic meltdown with a whole string of famous names going to the wall. It is a time when predictions of the

future are fragile, with little historical precedent to inform the decisions of today. It is a time when job security and mobility will be foremost in peoples mind. And unlike global warming it is much more immediate. We see shops in the high street close, we know people who have lost their jobs, and we see interest rates and prices falling.

It is an interesting paradox that of these two big issues, the one that seems to affect us least is the one we can do most about. If we ask the man in the street what he can do about climate change he will probably have some answers; turn the heating down, select energy efficient products, consider renewable energy. But ask him what can be done about the economy and you will get a blank stare. We feel we can do something to reduce global warming but feel powerless in the face of the economic crisis. The extent of the economic crisis has triggered massive intervention to stimulate economic activity and avert financial meltdown. We welcome the introduction by the Chancellor of a Carbon Budget which will be legally binding. This will set in place milestones towards the government's target of 80% reduction in carbon emissions by 2050. Financial incentives to help the transport sector eliminate inefficient cars on our roads will make a contribution to this target.

While commercial organisations focus on business issues and challenges it is up to leaders in government, industry and organisations such as CIBSE to push climate change up the agenda in UK businesses and homes. Acting to mitigate climate change is not an optional lifestyle choice and cannot be put on hold until the economy recovers, we must stick to our carbon emissions targets and the UK must deliver on its promises.

There are basically 3 strategies that can be adopted for the mitigation of climate change.

(i) Change our lifestyle

Changes in our lifestyle are hard to introduce. Transport is responsible for 10% of carbon emissions, but can our society exist without planes and cars. We could change our eating habits, Production of Beef generates 14x the carbon as Chicken for the same protein value. Lifestyle changes will be the hardest to make and we are running out of time.

(ii) Move to low carbon energy production

The 'Greening' of our energy production addresses security and price volatility of energy supply. Currently only 2.3% of the worlds energy is produced from renewables. However taking Wind, Wave, Geothermal, Biomass and Solar known reserves we have toe potential to supply all our energy needs many times over. This requires a long term political commitment which won't produce an immediate solution.

(iii) Reduce consumption

Reducing consumption is the only realistic short term solution.

Given CO₂ emissions resulting from energy use in buildings is twice that from the transport sector so we will be looking for similar financial incentives to realise these savings. If we are to spend our way out of the recession, then what better way than to intervene in the market and speed up the adoption of energy saving initiatives in the built environment. The solution to economic recovery may lie in the mitigation of climate change. Ploughing money into green technologies, carbon reduction and energy efficiency in our homes and businesses will create jobs and provide a basis for future economic growth. Here our members must stand firm in the face of outside pressures to ensure that these technologies are not sacrificed at the altar of short term cost cutting.

CIBSE is in an excellent position not only to support our members through these challenging times but to position ourselves at the forefront of the industry in the mitigation of climate change and carbon reduction. To really drive home the urgency of the need for action to tackle energy shortages. We both relish and welcome the opportunity that these challenges present.

100% Lighting

My background is lighting, 100% lighting or as we are sometimes referred to as 'pure lighters'. Like many of my contemporaries I studied at South Bank when it was a Polytechnic. My first degree included a lighting specialisation as well as industrial training within the lighting industry. Not only did I learn to file a metal block square I also learned to make a fluorescent lamp by hand, photometer luminaires and although I didn't realise it at the time took part in research that would lead to our current glare rating system. I was fortunate to

be surrounded by people who were passionate about their subject and were keen to share their knowledge and introduce me to the world of professional institutions. It was therefore in 1977 I was encouraged to join the Illuminating Engineering Society.

That was 68 years after Leon Gaster arranged an informal dinner on the 9th February 1909 at the Criterion in London for twenty-seven engineers, architects and medical professionals interested in the formation of a lighting society. The inaugural meeting of the Illuminating Engineering Society was held at the Royal Society of Arts, London, on Thursday, November 18th 1909, with a distinguished audience of about 150.

A year after I joined, the IES combined forces with the Institution of Heating and Ventilating Engineers to become first CIBS, then CIBSE. 100 years since that first meeting of lighting practitioners took place we celebrate the centenary of the grandson of IES, the Society of Light and Lighting.

By 1909 the electric lamp had been around for 30 years but was only used in wealthy households that could afford their own generator. Wide scale distribution of electricity was yet to come but it was the electric lamp that stimulated the creation of the generation industry. Most of London's street lighting was gas and it wouldn't be until after the first world war that fierce competition between gas and electricity would hot up. The fluorescent lamp had yet to be invented as had the profession of the lighting designer. We measured lighting quantities with a piece of paper and a spot of grease and

the main issue of the day was the establishment of fundamental units for the measurement of light.

In the same year JM Barrie's play Peter Pan opened in London and the keel of one of the most famous ships to be totally illuminated by electric lighting was laid down, RMS Titanic. An extract from a description of the lighting system shows many similarities with a modern lighting brief, night lighting, emergency lighting, energy saving and whole life costing!

The total number of incandescent lamps installed on board the Titanic is about 10,000, ranging from 16 to 100 Candle power. Tantalum lamps have been adopted throughout, except in a few cases in the engine room, the metal filament lamps having been found quite suitable for use on shipboard except where there is any pronounced vibration. Their use permitted the voltage to be reduced to 100. The economy secured by the reduced voltage more than compensates for the higher first cost of the metal filament lamps compared with the ordinary incandescent pattern.

In the first-class staterooms, in addition to the usual fixed lights, there are fitted sockets for portable electric lamps or fans. Special dimming lamps with two filaments are also provided so that a light of small candle-power can be kept burning throughout the night, a feature which will appeal to nervous passengers. Emergency lamps on distinct circuits, deriving current from the emergency dynamos, are placed at intervals in all the passages, public rooms, and compartments throughout the vessel, so that, in the unlikely event of an entire extinction of the ordinary lighting, there would still be illumination available at all the points where the passengers and crew would congregate. In fact, anyone could find their way from one end of the

vessel to the other at night by means of the lights on these circuits. Many of the electric light fittings in the passenger-accommodation are of majolica, which does not tarnish like metal. The ormolu electric light fittings have been supplied by Messrs. N. Burt and Co., Limited, of London. In the public rooms, main entrances, and suite rooms, these fittings are of a magnificent character, designed to agree in style with the particular period of decoration employed, and ranging from severe Italian Renaissance to elaborate Louis Seize. The main staircase fittings are after original French models. No trouble or expense has been spared in their selection, some having cost many hundreds of pounds each.

The founders of the IES could hardly have imagined the changes that would take place over the next century, or that a phenomenon called global warming would exist. That CIBSE and the building services industry would have a vital part to play in reducing world demand for energy, and that lighting engineers in particular would take up the challenge and play a significant part.

Energy Efficiency – Lighting the Way

Out of all our senses it is sight that plays the most important part with 80% of all our sensory information being received through the eye. The universal nature of light and its contribution to the overall performance of a building was brought home to me when visiting our members overseas. In northern Europe we are concerned with both heating and cooling a building to maintain comfort for the occupiers, although they have the option of personal intervention by adding or taking off layers of clothing. In Asia there is no concept of heating as the main need is to keep cool, they are very aware of the need to reduce solar gain and use natural as well as forced cooling in their buildings. But

when the sun goes down the need for light is universal. Light is light and dark is dark wherever you are, and so are the lighting solutions. It is independent of climate and culture giving us a world of experience to inform our codes and guides.

Lighting is the most visible consumer of energy in buildings. European buildings consume around 40% of the electricity generated; in places of high density like Hong Kong that figure is as high as 65%. Lighting load typically accounts for 30% of the electrical load in a commercial building and using today's technology we could save 40% of that.

Some of these savings have manifested themselves in a very public way with the withdrawal from sale of lamps with a poor energy rating. This is a global initiative with 33 countries already taking part and 20 planning similar action. This will be lighting's single biggest contribution to reducing carbon. If we could instantly put in place all the savings possible with today's lighting technology we would reduce enough carbon (through generation) to offset all the world's air travel. But somehow the popular press have missed the message and hailed it as a national disaster. However the bigger disaster is that we, the lighting community, have failed to get this message across by putting out mixed messages ourselves. Where else do we try to hang on to a technology that is now 130 years old and has been overtaken several times by better alternatives which will deliver up to 80% energy savings?

Other savings can be realised by simply ensuring that the lights are turned off when they are not needed. Turning down the office lights when there is

sufficient daylight or when you leave saves about 60% of the installed load. But look around any city at night and see the office lights blazing after midnight.

Many of these savings are brought about by technology and lighting is currently undergoing its own technological revolution. Solid State Lighting is developing at such a pace that it is difficult to predict more than a year ahead where it will be. It will deliver energy savings along with a previously unimaginable palette of new lighting tools for the designer to work with. We are no longer limited by technology, only our imagination.

We have already used messages on the part lighting can play in reducing carbon emissions to great effect. The 'lights off' message played an integral role in CIBSE's Carbon Clean up Campaigns, during which participants were encouraged to carry out simple carbon reduction activities within the workplace such as switching off lights and considering the use of local sensors. By starting off with such a visual action many of the participants were able to take the carbon savings further and motivate colleagues and management to get involved. And globally we had 'Earth Hour' where on March 28th 2009 1 Billion people worldwide turned off their lights showing their commitment to saving the planet.

Together with the contribution that other building services can make to the challenging targets we have been set, we are on our way to zero carbon commercial buildings by 2019. Building service engineers are now being engaged at concept stage to work alongside architects to create these

buildings for the future. The challenge for everyone is to tackle climate change in a way that will minimise the impact of change on the daily lives of people.

It's good to remember our motto "For the greater comfort of mankind"

because through our professional practice we have to deliver on our lives and habits. This will be the future role of the Institution.

Supporting our Members

Respect for the profession has never been higher. Over the last five years CIBSE has established itself at the forefront of tackling climate change in the construction sector. Through the Institution's work our members have greater potential to deliver significant savings in energy usage. We seek to work with government to support policy development with new ideas and initiatives.

It is also clear that the economic climate is having a disruptive effect on the jobs of our members. CIBSE will continue to do what we can to support our members. Many will have to be more mobile and move from country to country as the global economy shifts. Over 20% of our members live and work overseas and alongside our Hong Kong and Middle East regions we are actively developing new bases in developing countries to support members who do not have the professional networking opportunities open to those in the UK.

Our Low Carbon Energy Assessor Scheme was created for the membership, but in support of the Energy Certification legislation. We now have over 1,000 CIBSE Low Carbon Energy Assessors trained and accredited to produce Energy Performance Certificates and Display Energy Certificates, and

undertake air conditioning inspections. They are able to do more than simple 'carbon counting' - they are able to help clients minimise the carbon emissions of their buildings, both in design and operation. They can identify obsolete or inefficient plant and fittings so that planned replacement can be prioritised and built into asset management schedules and investment plans. With their detailed knowledge of building services they can also advise on new energy efficient or renewable systems, and advise on their suitability for a particular building, owner or occupier.

CIBSE publications also provide members with the necessary knowledge needed to reduce energy consumption in the built environment. Titles such as '*Guide L: Sustainability*', '*Energy and Carbon Emissions Regulations: A Guide to Implementation*' and the Lighting Guides are all examples of the practical help CIBSE delivers for practising engineers. Our new CIBSE Journal is another.

The launch of our Flexible Learning scheme, providing further professional development and CPD modules online, gives members easy access to a rich vein of learning. Twelve modules will be launched over the next year including the Lighting module which I have given my personal commitment to see completed before the end of my Presidential year.

Another new innovation is the webinar - a web based seminar which allows delegates to attend a conference from the comfort of their own desk, saving transport costs and carbon emissions. I was personally a guinea pig for this new form of learning giving a seminar from our Hong Kong region back to the

UK. It struck me that this was a really useful way of receiving CPD when you are in remote locations or can't get access to regional meetings.

The CIBSE website will continue to provide the guides and other publications to members, enabling them to access expert advice and up to date information from wherever they are in the world.

Over the last year we have been looking critically at the way CIBSE is responding to the changing environment in which building service engineers find themselves. We have gone from being the people who do calculations to design partners at the beginning of the building process. More and more we are being engaged at the design stage to work alongside Architects to deliver sustainable buildings for the future. However our structure is still very compartmentalised, with different disciplines working largely in isolation from each other.

We want to develop an Institution that is much broader in its scope and can support the full range of services that make modern buildings work. This means engaging with other disciplines outside the institution and improving communication between those within.

We have therefore modified our committee structure to reflect where we want to be as an outward facing organisation which can provide the link between the many different disciplines that contribute to the built environment.

- Our communication committee is currently focused on members. We will introduce a separate panel focused on external communications to Government and the press
- As a learned institution we want to strengthen our links with Universities and create a knowledge network that will support our members and publications.
- The inter-disciplinary group will pull together Designers, Architects, Engineers, Planners, Facility Managers, Developers, Letting agents etc to formulate important strategy starting with the climate change agenda. This will ensure we have a public facing approach to this important subject that links in to sister professions.

Working together

Lighting is both an art and a science. It lives both within the building services discipline and outside it. Outside the built environment lighting can be seen in creating relaxing interiors in planes and trains. It is used to create safer roads and urban spaces which can form an extension of our living spaces. It is used to entertain us when we visit the theatre or night club or watch television. It enables us to live in a 24 hour society. None of these are typical areas where a building services engineer will be involved but they are all within the scope of the lighting professional

As a result, a number of organisations have emerged to represent the different strands of the lighting profession.

The principal two are CIBSE's own Society of Light and Lighting (SLL), successor to the IES, and the Institution of Lighting Engineers (ILE) with its roots in the exterior field. In 1994, as President of the ILE, I was a signatory to the Memorandum of Understanding between these two Institutions marking the beginning of co-operation between us. As lighting has been more widely recognised as a profession in its own right so the Professional Lighting Designer has emerged as a role and with it the Professional Lighting Designers Association (PLDA) and the International Association of Lighting Designers (IALD) to serve their needs.

The Association of Lighting Designers represents designers working in theatre (LDA), and the Society of Television Lighting Designers (STLD) cover television. The International Lighting Commission (CIE) takes research and translates it into standards in conjunction with ISO. There are the trade associations, the Lighting Industry Federation (LIF), Lighting Association (LA) and the Highway Electrical Manufacturers and Suppliers Association (HEMSA) represent manufacturing. Finally there is the Lighting Education Trust, a charity supported by the whole sector which helps to fund and sustain lighting courses at all levels in the UK.

Each has evolved to service their respective members and interests. However, as the economic climate tightens, employers are looking hard at the time available to support Institution activities. We have to ask whether such an

arrangement is sustainable in the future. Whilst each organisation needs to retain its own identity, there are many areas where close co-operation will produce benefits for the whole profession. This will save that most precious commodity, time, that members give freely but which is under constant pressure especially in the current economic climate.

By working together on common issues, we can share resources in the best interests of the profession. Obvious areas of co-operation are technical, education and professional recognition and I am pleased to say that in these areas co-operation is high and increasing. It will be important in the coming years to unite to tackle the issue of climate change and be a single point of contact for government to access expertise from all sectors of the lighting profession. Over the last year the leaders of the different lighting organisations have been working on a formula for co-operative with the objective of bringing them even closer together in the future.

Modelled on the Construction Industry Council, the Lighting Council would bring together all stakeholders in a forum where common interests are shared, whilst the distinctive character of its members is retained. I am confident that all parties will work towards this common goal and I offer my full support to see the Lighting Council operational by the end of my presidential term. For CIBSE members this will mean access to a richer vein of knowledge and experience channelled through our own Society of Light and Lighting.

In conclusion CIBSE must respond to major challenges in the coming year and beyond. But CIBSE is uniquely placed to respond to the issue of climate change and to support its members to weather the economic storm. I also believe that the Society of Light and Lighting will be a key player in these debates by working closer with other lighting professionals and other building services engineers in the future. I look forward to meeting as many members as possible in the coming year.