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## Main Stage

### President's address and opening

#### Andrew Rowe **President SPACES**

Andrew is a Chartered Engineer. He has delivered and managed many capital projects, including leading the technical and delivery elements of Suffolk County Council's Building Schools for the Future and School Re-organisation programmes.

Andrew previously managed the in-house consultancy team at Suffolk County Council, offering multi-disciplinary design services, project and programme management, and estates advice on acquisitions, disposals and ratings.

In 2013 he became the Managing Director of the new company formed by Suffolk County Council to deliver its design and property consultancy. Concertus Design and Property Consultants Limited is multidisciplinary team of property consultants offering a wide range of property services to the public and private sector.

### Welcome from Leicester, De Montfort University

#### Ljiljana Marjanovic-Halburd **PhD, Professor of Building Energy and Information, Head of School of Engineering and Sustainable Development, De Montfort University**

During her academic career Ljiljana contributed towards over 20 research and consultancy projects relating to buildings, energy and people.

Ljiljana's areas of expertise include building operational efficiency, data integration and building information modelling (BIM), energy management in general but specifically the relationship between building load dynamics and building energy consumption.

She have published over 60 papers of which more than 25 are in peer reviewed international journals and around 30 are in refereed proceedings of international conferences

Working in a number of different European Universities (Belgrade, Denmark Technical, Norwegian Technical, Liege, Loughborough, Anglia Ruskin, UCL, Derby), Ljiljana has developed excellent interpersonal and communication skills, enabling effective liaison with different international partners. In recognition of her management skills, Ljiljana was sponsored by UCL in 2016 to attend UCL's Women in Leadership Programme.

Ljiljana has over 25 years of genuinely enjoyable teaching experience in Higher Education sector across Europe on all levels. In 2013 the teaching team on the MSc Facility Management Course, where Ljiljana was a Course Director, won UCL Provost's Teaching Award (Team category)

### Keynote: English Education; challenges and priorities for the next decade. Including implications for school and college organisation and prospects for capital spending

#### David Laws **Executive Chairman of the Education Policy Institute and former Chief Secretary to the Treasury, Schools Minister, and Cabinet Office Minister**

David joined the EPI as Executive Chairman in September 2015.

Between 2010 and 2015, David served in the Coalition Government as Chief Secretary to the Treasury, Schools Minister, and Cabinet Office Minister. Whilst Schools Minister he was responsible for policy areas including all capital and revenue funding, the Pupil Premium, accountability and policy on teachers and leadership.

David was Member of Parliament for Yeovil from 2001 until 2015.



David graduated from King's College, Cambridge, with a double first class honours degree in economics and worked at J.P. Morgan and Barclays de Zoete Wedd.

## Main Stage Session 1

The UK has a long history, since the 1870s, of investment in learning spaces of all kinds, and meeting all needs. As an industry we have some evolved guidance on the efficient use of energy, on cost per square metre, and so on in our specification of those spaces.

However, we are only beginning to understand the importance of the very many factors that impact on learning itself, from the levels of CO2 and micro particulates in the classroom, to temperature, air pressure, noise and more. Never mind how much energy is lost by weak design, how much learning is lost in the same way?

In sport, a focus on the aggregation of marginal gains - all the tiny details that matter to performance - has led to a transformation in sporting achievement, as can be seen from the recent Olympic medal tables. Bringing that forensic level of detailed design to learning spaces is producing some remarkable - and remarkably affordable - gains. This session explores all that.

**Professor Stephen Heppell** CEO [Heppell.net](#) Limited and Felipe Segovia Chair in Learning Innovation at Universidad Camilo José Cela, Madrid.

Professor. Chair in New Media Environments, [Centre for Excellence in Media Practice](#), Bournemouth University, Prof from 2008 - 2017,

Emeritus Professor Chair in New Learning Environments, Anglia Ruskin University, from 1989 - continues

Executive chairman [Learning Possibilities+](#) from 2010 - continues

Awards this century include:

In June 2006 Stephen was awarded the [Royal Television Society's Judges Award for Lifelong Services to Educational Broadcasting](#).

In 2008 he received the prestigious [BETT Award for Outstanding Achievement in ICT Education](#)

In 2014 he was [honoured to receive](#) the UK's NAACE Award for Lifetime Achievement in educational technology.

Stephen's "*eyes on the horizon, feet on the ground*" approach, coupled with a vast portfolio of effective large scale projects over three decades, have established him internationally as a widely and fondly recognized leader in the fields of learning, new media and technology.

A school teacher for more than a decade, and a professor since 1989, Stephen has worked, and is working, with learner led projects, with governments around the world, with international agencies, Fortune 500 companies, with schools and communities, with his PhD students and with many influential trusts and organizations.

## Main Stage Session 2

If we are paying attention to the aggregation of marginal gains in the design of our learning spaces, what kinds of spaces are opening up around the world as a result? This second session explores some remarkable case studies of learning spaces from all round the world.

It also explores the organisational and structural changes that complement these newly engaged and alert learners. This is what tomorrow's schools look like, and they are already up and running.

**Professor Stephen Heppell** CEO [Heppell.net](#) Limited and Felipe Segovia Chair in Learning Innovation at Universidad Camilo José Cela, Madrid.



## Workshops Session 1

### Climate-Based Daylight Modelling: Blue-Skies Research to Real-World Application

Building science is an applied science. As such, building scientists are encouraged to demonstrate that their research has had some substantive impact in the 'real world'. In contrast to what is typically portrayed by applied science funding bodies, the routes to real-world impact are largely hidden or at best poorly delineated. This talk describes a diverse collection of case-studies where 'blue skies' building science research ended up being applied to either notable building projects or leading to major changes in standards/guidelines, e.g. the daylight requirements in the Priority Schools Building Programme.

[John Mardaljevic](#), Professor of Building Daylight Modelling, School of Architecture, Building and Civil Engineering, Loughborough University

John Mardaljevic (PhD FSL FIBPSA) is Professor of Building Daylight Modelling in the School of Architecture, Building & Civil Engineering, Loughborough University (UK). Mardaljevic pioneered what is now known as Climate-Based Daylight Modelling (CBDM). Founded on rigorous validation work, CBDM is now the basis for research and, increasingly, industry practice worldwide. Mardaljevic's practice-based research and consultancy includes major projects such as the New York Times Building and The Hermitage (St. Petersburg). He currently serves as the 'UK Principal Expert on Daylight' for the European Committee for Standardisation CEN / TC 169 WG11, and on a number of International Commission on Illumination (CIE) technical committees. In 2012 Mardaljevic was presented the annual UK lighting award by the Society for Light and Lighting (SLL). He was Associate Director for Daylighting CIE Division 3 and CIE-UK D3 Representative between 2012-19. In 2017 he received the IBPSA Innovative Application Award.

### Digital Twin technology – example use cases – improvement of school operational performance, portfolio energy/BMS data management and creating a university campus Living Lab

Eric Roberts, Business Development Manager, ICL

### Special Educational Needs Design Workshop

The workshop covers:

- What we've learnt from SEN buildings in use studies
- An overview of how the Special Educational Needs schedules of accommodation work.

[Mark Pratt](#), Strategic SEN Design Advisor DfE

After a 20-year career in Education Architecture in the private sector I recently moved to the DfE. As a Strategic Design Adviser my aim is to ensure that these technically demanding SEN projects have a suitable approach to meet the requirements of the SEND designation and provision-specific pedagogy. A collaborative, communicative style is key to my approach and proven track record of positively supporting SEND provision expansions, refurbishments and new builds. "My aim and drive is to positively influence education architecture to facilitate learning to improve lives."

### Using the DfE's Building Bulletins 103 and 104 to Make Best Use of the Existing School Estate

In current times when Local Authority, MAT and Diocese funding is under significant pressure, we need to make best use of the existing education settings to efficiently provide places for the rapidly changing mainstream and high needs pupil populations. The DfE's building bulletins provide an extremely comprehensive guide to the number and



area of spaces required within every type of education setting. If used in the right way, they can unlock a significant amount of capacity for both mainstream and SEND schools.

This workshop will use working examples of where these approaches have been utilised to establish additional capacity within LA maintained and academy settings to realise significant savings against Local Authority budgets, whilst providing increased revenue for the schools.

[Alex Wakefield](#), Regional Director, Faithful+Gould

Alex is a Chartered Building Surveyor with 20 years' experience of delivering professional consultancy services to the Public Sector.

[Rob Tozer](#), Managing Director, 1<sup>st</sup> Planner

Rob spent the 1<sup>st</sup> stage of his career working for Main Contractors planning their school building programmes, where he developed and implemented lean integrated planning, project controls and automated reporting processes.

Since establishing 1<sup>st</sup> Planner in 2011, he has developed unique mainstream and high needs sufficiency assessment tools based on the DfE's Building Bulletins 103 and 104 to make best use of the existing school estate. During this time, he has also developed SEND pupil place projection, commissioning strategy and forecasting tools. These tools have been applied within Local Authorities, Multi-Academy Trusts and Diocese across the country.

### **Working with Local Authorities in the development of School Programmes**

This presentation will focus on different aspects of working with Local Authorities in the development of School Programmes, with a specific focus on sustainability-related aspects such as sustainability accreditations, energy, thermal comfort and soft landings, but including references to planning, land acquisition, programme development, standardised specifications, construction techniques, procurement routes, common data environments and social value.

[Dr Jose Hernandez](#), Director Sustainability and Energy, Pick Everard

Jose joined Pick Everard after completing his PhD at the Institute of Energy and Sustainable Development (IESD) at De Montfort University. As the Director for Sustainability and Energy, his team has worked on a substantial number of educational projects, including the Hugh Aston and Vijay Patel buildings at DMU, a Schools Delivery programme for the London Borough of Hounslow and currently working with Buckinghamshire County Council in the preparation of a Schools Accelerated Change programme. He has represented Pick Everard at the UK Green Building Council, the Soft Landings Users Network and the Society of Façade Engineering.

## Workshops Session 2

### **Development of user friendly BMS Interface for Primary Schools. Winner of the Innovation Award at the SPACES Awards 2018**

Working with AK Controls a local TREND system house we considered how the different building controls in our primary schools could be linked together in a more cost-effective way. As part of the exercise we also considered the feedback we had from numerous schools on the difficulties they have in accessing and understanding BMS control systems. This has led to the development of the AK Connect system, an add on to the standard BMS system to help the school interact with the BMS control system in a more intuitive way.

[Steve Rufus](#), Service Manager for Engineering Services, Dorset Council.

Steve has 35 years of experience in building services working for contractors, consultants and local authorities. For the past 15 years he has led the engineering team which is part of the multidisciplinary in-house construction consultancy team at Dorset Council (formally Dorset County Council).

## DfE Output Specification (OS) for School Buildings & Grounds

[Jennifer Coldrick](#), Architect/ Design Advisor DfE

### Fire Safety Design in Education Premises

A presentation of the common design practices and guidance documents that drive the design of new and existing educational buildings, looking at Life Safety and Property Protection principles and following prescriptive and performance designs.

[David Thompson](#), Fire Safety Engineer, Atkins

David is a fire safety engineer within the fire engineering team in the Atkins Infrastructures division. Since joining Atkins in 2012 David has developed fire safety strategies for several complex projects including schools, waste processing plants, high rise buildings, airports and power plants.

David studied a Master's of Science in Fire Safety Engineering and, with a bachelor's degree in civil engineering, has a strong understanding of the application of fire dynamic principles to the built environment, in particular, the effect of fire on structures and the interactions between people and fire.

Additionally, David is experienced in stakeholder and Local Authority interfacing and, in particular, developing contacts within the Fire and Rescue Services.

### Wellbeing in Education Environments

Daylight & Ventilation is becoming even more important in our daily lives, as we spend 90% of our time indoors and with reinforcing evidence that our indoor climate is a catalyst for poor health, we need to act fast and act now.

We know Daylight & Ventilation creates better health & well-being, in addition we have studies illustrating a child's learning can be improved by as much as +16% within the right classroom environment.

We will share with you some of these key facts, as well as inviting you to work in collaboration with us by utilising our new daylighting & ventilation services we now have to offer.

[Richard Williams](#), Business Development Manager, Velux

- 32 years of experience
- Qualified Architect Technician
- Based in Newcastle-upon-Tyne
- Technical advice
- Design service and daylight renders
- Project management
- Inception to post-occupancy support

## Workshops Session 3

### Climate Change Adaptation: Understanding the Risks

This workshop will provide a high-level overview of the climate change risks faced by the UK school building stock and a summary of on-going work to understand how these risks may be addressed in the design, operation and management of buildings. The following topics will be covered:



- Climate change impacts - brief introduction to the latest science, summary of changes expected to occur in the UK this century and their potential impacts on the school building stock
- DfE standards - current requirements related to climate change and an overview of recent changes to the DfE Output Specification (including the cooling hierarchy)
- CIBSE School Design Group climate change adaptation working group – introduction to on-going work to better understand the risks of higher summer temperatures

[Hershil Patel](#), Head of Energy DfE

Hershil is an Engineer and Head of Energy at the Department for Education. His role is to address the climate change in the educational estates through reducing actual carbon emission in the educational estate and assessing the long term impact of climate change in the estate.

[Dr Tim Taylor](#), Consultant DfE

Tim is a Senior Consultant in the Strategic Asset Management team of Faithful+Gould. He has recently been seconded part-time into the Department for Education to support them with understanding the risks of climate change to the school building stock.

### **Innovative Learning Spaces & Teacher Change (ILETC)' Research from AUS & NZ + Pencoed School, Wales**

[Shane Cryer](#), Concept Developer - Education, Saint-Gobain Ecophon

After 30 years of construction experience, with an academic background in building acoustics and property surveying, Shane has spent the last eight years immersed in the UK and Irish education sector for Saint-Gobain Ecophon. Working with some of Europe's best acousticians and audiologists has given him valuable insight into the importance of a good acoustic environment in our classrooms and innovative learning environments.

Shane is part of the Ecophon team working with the world's largest education environment research programme, ILETC. The Innovative Learning Environments and Teacher Change research for the Australian states and New Zealand government is coordinated by Prof. Wesley Imms at the University of Melbourne.

### **Learning from schools – knowledge share**

[Ann Bodkin](#), Head of Design Intelligence DfE

Over the last five years, Ann, as Head of Design & Specification, has shaped the design standards of ESFA Capital, to integrate architecture and environmental engineering. The standards set a balanced brief, to inform design solutions that support the needs of the learners, staff and school leaders.

Ann's career as an architect includes the Architects Journal describing Ann as one of the top women influencing sustainable architecture in the UK.

### **Wear your own shoes, walk in someone else's**

[Sarah Lambshead](#), National Education Sector Manager at Willmott Dixon

After the first part of her career spent working in the charity sector Sarah now has 14+ years in construction, the last 10 with Willmott Dixon. Having initially started a career in construction by chance, Sarah has enjoyed finding herself in an industry with so much potential and variety – and wants to spread the word. Passionate about people and the communities we live in, her role gives a wide scope for finding ways we can have a positive impact on the opportunities available for everyone, when we approach our work with that purpose.