Guthrie Douglas



CPD PROGRAMME 2019-20

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INTRODUCTION

I am delighted to present our CPD programme for 2019/20 which gives designers and specifiers the choice of how much detail they would like to go into, from a broad introduction to shading systems through to a number of specific technical areas to be considered for individual projects.

Our CPD seminars are quite different to those of most product manufacturers. They are:

- **NOT RIBA accredited**, allowing for a much wider range of topics and more project specific detail than is possible under RIBA accreditation.
- Interactive. Please do not attend if you expect to gently fall asleep or enjoy a free sandwich whilst checking your emails. It is unusual for us to use PowerPoint for anything other than displaying images.
- **Technical.** We do run one introductory level general presentation. After that, our topics are all technical and are delivered by engineers from across Europe who are often world-leading experts in their field.
- Immediately applicable to the projects you are working on. It is unusual for us to deliver a CPD that is not followed by working through a number of current projects in the practice.
- The first step in building a relationship with you and your team. We run our CPD programme with the expectation of subsequent project consultation and long term collaboration.

Guthrie Douglas have been engineering specialist blinds for over 40 years and our products play a crucial role in many of the world's most innovative architectural projects.

We believe that the best design happens collaboratively, and experience has taught us that the earlier we're involved in the process, the better placed we are to design an effective shading system that can be hidden when not needed, helping you to maintain your design intent.

We look forward to working with you. Please find a booking form at the back of this booklet.



Andrew Kitching Managing Director Guthrie Douglas Group Ltd



TOPIC 1 - AN INTRODUCTION TO SOLAR SHADING FOR SPECIFIERS

Our entry level CPD Seminar provides a basic introduction to generic solar shading products and their benefits. It is appropriate for designers who are new to solar shading, or as refresher training.

In this CPD presentation we discuss the solar and optical problems associated with current glazing technology and how the correct analysis of your glass specification can reduce solar gain and control visible day light.

The CPD will also explore how the latest shading devices can co-exist with glass to create a healthy interior work and living environment.

The presentation will focus on the benefits of solar shading, the latest thinking on solar control and the new systems and products available for both internal and external shading of a building.

You will also gain an understanding of how a calculated selection of shading products can optimise the glazing specification for maximum savings on initial investment.

The agenda will cover:

- The impact solar gain can have on a building's running costs
- · Eliminating 'Sick Building Syndrome'
- Reduction of direct glare and reflection at the workstation
- Lowering HVAC usage and achieving lower CO₂ emissions
- Precision engineered products using recycled material
- Investigate project specific solutions currently underway in the UK





TOPIC 2 - DYNAMIC FABRIC SHADING FOR FXTRAORDINARY STRUCTURES

Our most popular CPD seminar introduces the unexpected possibilities of fabric shading for geometrically complex facades, with a particular focus on tensioned fabric systems.

Architects and designers create spectacular glass structures that illuminate our buildings, creating memorable spaces that make us feel alive. But glass has an uneasy relationship with the environment, leaving designers today with a responsibility to reconcile beauty with energy efficiency, well-being and comfort. Well designed, dynamic fabric shading systems are essential to this balance, precisely controlling the internal atmosphere and elevating light and shade to their rightful place as architectural features.

Shading systems can be designed to integrate with and follow the complex geometry of modern design. A series of case studies will be presented showing tensioned blinds installed in some very challenging designs, and concealed when not in use.

Examples will be shown of internal and external installations successfully completed on curved, angled and very large glazed structures.

The most advanced tensioned fabric systems conceal a torsion spring and motor within the blind mechanism, allowing the design of curved, triangular and other shapes of system whilst holding the fabric flat.

This innovative tension mechanism will be deconstructed and explained using a working sample and component parts.

- Can glass structures be beautiful and comfortable and energy efficient?
- Can I hide blinds when they are not needed?
- How do tensioned fabric shading systems work?
- Shading case studies of fascinating structures including the Broad Museum, LA, Evolution Tower, Moscow and the Maths Institute, Oxford



High performance facades require expertly engineered fabrics to achieve the correct balance of heat reflection, glare control, views to the outside, durability, safety, aesthetics and a low carbon footprint. This seminar looks in detail at the relationship between fabric and glass, and how to specify fabrics to meet complex and often conflicting design criteria.

A key objective for most building designers is to reduce energy consumption whilst avoiding problems of solar heat gain and glare. Knowledge of the solar and luminous characteristics of fabrics therefore becomes imperative.

Engineers, architects and building designers understand that high performance fabrics can have a significant impact on solar gain and glare, and therefore BREEAM and LEED scoring systems for light pollution, thermal comfort and energy performance.

But how can the performance criteria of the façade engineer be met without compromising the look and feel of a project?

There are hundreds of factors which may require consideration depending on the design context and performance specification. And fortunately, (or unfortunately), there are literally thousands of technical fabrics on the market. So, where to start?

Technical fabric characteristics are introduced together with some simple tools and questions for designers to ask when narrowing down the choice of fabric for a project.

- · Where should I start when specifying a technical roller blind fabric?
- · How does colour choice affect performance?
- · Physical demonstration of the difference between a 'standard' and a 'high performance' fabric
- Fabric swatches & specification guide





FOR EXTERNAL FABRIC BLINDS

A technical presentation looking at the engineering behind the European standards for wind loading on external blinds and providing pointers for integrating external blinds into façade design.

Ask any shading expert or building physicist for their advice on the best solution for reducing solar heat gain and they will immediately tell you to put the blinds on the outside.

External shading systems can reduce heat gain to almost zero, and result in savings of some 65% on air conditioning costs. They remove the internal clutter of boxes or rollers around your windows, and can even provide insulation in winter. There is only one problem: the weather.

For external systems to perform well, they must withstand precipitation, extreme temperatures and, most crucially, strong winds.

Whilst it is crucial for architects and design teams to have an awareness of the key points when specifying shading solutions, the plethora of interrelated standards that regulate shading systems does not exactly make for light bedtime reading.

The myths will be de-bunked in favour of some simple calculations to help designers make the right specification decisions.

- Why specify External Blinds?
- · What is the difference between wind speed and pressure and why does it matter?
- Are 'Hurricane Resistant' blinds possible?

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TOPIC 5 - SHADING CONTROL & AUTOMATION

On average, manual blinds are moved less than twice per week! Without automation, many of the benefits of shading systems specified for commercial projects are not realised.

This seminar explores the case for motorisation and control of shades, and introduces a hierarchy of control strategies, from cost efficient solutions for smaller projects to integrated network options incorporating Al based software for mega-projects.

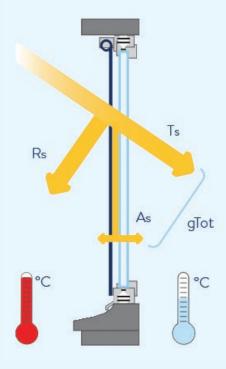
The benefits of a solar shading system in terms of improved indoor comfort, better visual comfort, energy savings and use of natural daylight can only be harvested if the system is automatically controlled.

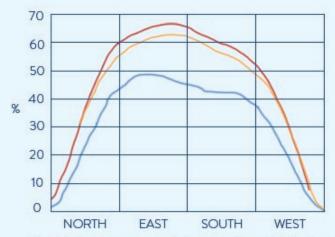
It will then work properly even when the occupant is absent and it will react to the sun and the wind without requiring any attention, which is important for the energy saving aspect. A huge variety of intelligent building controls, sensors and accessories are available to specifiers from a number of different manufacturers.

A framework is introduced to guide specifiers in reaching the optimum solution for each project.

- Why should solar shading be automated?
- Which control systems are best for which type of projects?
- An introduction to current functionality including algorithmic systems, sun tracking and shadow modelling
- How do shading control systems interact with other building networks and control systems?







Reduction in primary energy use for heating, cooling and lighting through shading, when compared to the energy use without shading, for double glazing (red). low-e glazing (orange), and solar control glazing (blue).

When glass is specified without shading, occupants may experience severe discomfort due to heat and glare, and in extreme conditions the glass may crack. This seminar looks in detail at a technical case study of where a poor project specification lead to exactly that, how this was resolved and explains the value of a combined shading & glazing analysis as part of the specification process.

Engineering is done with numbers. Analysis without numbers is only an opinion. Akin's famous law of Spacecraft design is very transferrable to building physics modelling, and the numbers can get quite complex when considering the effect of solar radiation on two different materials, but understanding the point behind these numbers is important for all designers if their buildings are to be both energy efficient and comfortable for the end user.

Generally available analysis systems and calculations are explained, as well as a higher level bespoke software based system developed by the global market leader in window coverings.

- What is combined shading and glazing analysis and what are it's benefits?
- Too hot, too bright and cracking glass: a case study
- · The Building Physics Modelling systems that lay the groundwork for comfortable, energy efficient buildings



For many designers, practical experience of handling materials and understanding their construction process is worth a thousand lunchbox presentations.

Guthrie Douglas are pleased to offer a 1 day visit to their factory in Warwick where up to 6 participants will have the opportunity to construct and deconstruct a number of products from standard roller blinds through to technical tension systems.

A bespoke agenda is planned in advance to fit your objectives and the level of experience of the participants, but as a general rule about half of the day is spent experimenting and learning hands on in the factory, combined with any 2 of the CPD topics outlined in this brochure.

We look forward to welcoming you to Guthrie Douglas!

- Tour of the Guthrie Douglas manufacturing facility
- · Build and test a roller blind, learn how they work
- Deconstruct a tension system down to its individual components
- Choose any 2 CPD presentations to break up the day



BOOKING FORM





Selec		IE CLD 36	illillar (s) required a	ind specify the preferre	ed location, date and time.		
	1. An Introduction to Solar Shading for Specifiers						
	2. Dynamic Fabric Shading for Extraordinary Structures						
	3. Technical Fabrics for High Performance Façades						
	4. Wind Resistance for External Fabric Blinds						
	7.	Factory	Tour & Blindmaking	Workshop			
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