Construction NEWSLETTER

LUCIDEON

insight creating advantage

ISSUE 2

THIS ISSUE

NEW SERVICE - BALUSTRADE TESTING

Balustrades play a crucial safety role in preventing accidental falls from exposed edges on buildings and other structures. In the UK, load testing of the structural elements and panels of all balustrades is mandatory.

At Lucideon, we can test free standing glass, post, rail, spindle and infill balustrades to BS 6180:2011 'Barriers in and about buildings' and Eurocode 1. Manufacturers and suppliers of balustrade systems and components can have their products tested on-site using our mobile testing services or in our UKAS accredited laboratory. We also provide testing for Health and Safety Managers and Facilities Managers to assess the on-going safety and performance of existing in-situ systems.

For further information, please contact:
Steve Newman, Product Manager on:
+44 (0)1782 764356
or email:
steve.newman@lucideon.com

UPDATE FROM Dr GEOFF EDGELL

DIRECTOR AND PRINCIPAL CONSTRUCTION CONSULTANT

Welcome to the second edition of Lucideon's Construction Newsletter, a chance to find out about the new developments across the business and get an insight into our key services.

We're continually investing in our facilities. We've recently commissioned a wind uplift test rig for measuring the resistance of roofing membranes, flat roofing materials and solar panels. We've also launched the new Digital Image Correlation (DIC) testing service, 3DStrain, which provides vital insights and understanding into the performance, durability and failure analysis of materials, products and structures under load.

Justin Fryer has joined the team as Construction Technologist. Justin is working across a wide range of our testing services with a focus on structural beams and ancillary components. Prior to joining Lucideon, Justin was a Project Manager and responsible for over-seeing the assembly of timber frame and traditional housing, and the renovation of commercial buildings.

Our new website now features a dedicated Construction Insight Hub. From there, you can find out what events we're attending, read our latest news, download our white papers and find out more about the work we do through our case studies. Over the last few months, we've been busy writing several white papers – they all feature in the newsletter and are free to download from our website.

Read on to find out more about what's new, and how Lucideon's people can really help you...

EVENT - 6 NOVEMBER NEW CONSTRUCTION PRODUCTS: THE WAYS TO MARKET

LUCIDEON HEADQUARTERS, STOKE-ON-TRENT, UK

From meeting demands for new housing to reducing construction costs and keeping apace with government's sustainability targets, the construction industry is under pressure to develop new and innovative products.

Our event will bring together four organisations that will play a pivotal role in the development of industry to meet these goals. The BBA, BSI, NHBC and LABC will provide their views on how routes to market for new products may develop over the next few years.

Further information about the event will be published on our website shortly.

Got a question?

Please give me a call on:
(UK) +44 (0)1782 764400
or email:
geoff.edgell@lucideon.com

WEBINAR

SAMPLING BEST PRACTICE FOR IMPROVED BUSINESS PERFORMANCE

You're invited to join our free webinar on Tuesday 20 October 2015 at 2pm (UK time) – 'Sampling Best Practice for Improved Business Performance'.

Within a manufacturing business, sampling is an activity used across many operations and in various applications: product and process R&D, raw material/process/product quality control, continuous improvement, competitor comparisons and failure investigations, to name but a few.

During the webinar, we will explore the importance of sampling in these applications, including how knowledge of appropriate sampling strategies and best practice can drive-up operational efficiency and improve financial outcomes.

The webinar will be hosted by Dr Chris Pickles, Principal Consultant - Surfaces & Coatings and Dr Richard White, Head of Testing.

Dr Pickles and Dr White will discuss:

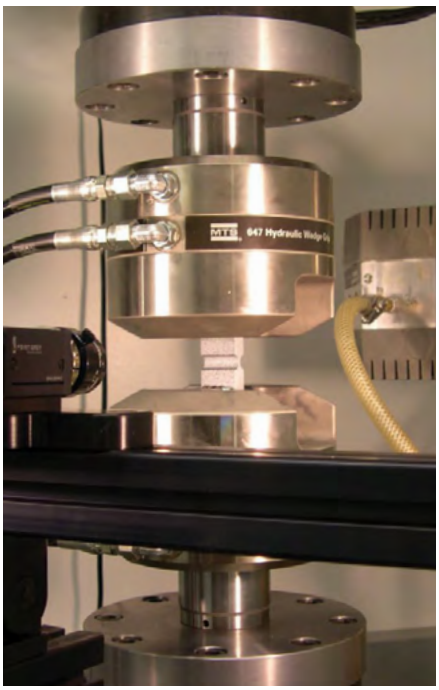
- the relationship between taking a sample and taking a risk - the risk that an unrepresentative sample may lead to poor decisions and inappropriate actions
- the techniques used in data analysis which are based on certain assumptions about how the sample was taken and the nature of the population that the sample represents
- how some knowledge of the assumptions underlying the statistics can help put risks into perspective
- the approach to sampling for product difference assessment
- the implications for sampling procedures of different data types
- physical sampling issues.

To register to attend, visit:
www.lucideon.com/sampling

WHITE PAPER

DIGITAL IMAGE CORRELATION FOR CONSTRUCTION

Digital Image Correlation (DIC) is a full-field image analysis method which employs high resolution digital cameras to track displacement occurring on the surface of an object. It has gained recognition for the potential that it possesses for a number of industries, not least among them the construction industry.



The white paper focuses on potential applications for the construction industry, draws upon examples of previous testing applications and highlights the advantages that DIC offers over conventional structural and materials testing methods.

The non-contacting 3D measurement system can be used to create full-field strain and displacement maps which can then be converted into video footage for further examination. With current developments in optical measurement systems and computer analysis techniques, the use of DIC, in conjunction with traditional measurement techniques, is set to increase greatly over the coming years.

Traditionally, in order to examine strain and displacement, strain gauges and Linear Variable Differential Transducers (LVDTs) are placed on the surface of a specimen at the points of interest. However, if a large or complex specimen needs to be analyzed, accurate placement of the devices can be problematic. Traditional point-based testing methods only receive input from a limited amount of data points. The ability to forego strain gauges and LVDTs offers a distinct advantage to the DIC user and allows full-field 3D analysis to be applied to all areas of construction, from individual building materials and products, through to large-scale structures.

Download the free white paper at
www.lucideon.com/construction

DYNAMIC WIND UPLIFT TESTING FOR ROOFING SYSTEMS

We've recently launched a new service to measure the wind uplift resistance of roofing membranes, flat roofing materials and solar panels.

The enclosed electrical fan system can test products to ETAG 005 – Liquid Applied Waterproofing Kits and ETAG 006 – Mechanically Fastened Flexible Roof Waterproofing Membranes. The programmable system can also be adjusted to accommodate bespoke testing regimes and cycles.

Rig features include:

- the capacity to test samples up to a maximum of 4 by 3 meters
- the adjustability to house various roofing systems and depths of construction
- windows to view tests in progress
- climate controlled conditions.

Visit:
www.lucideon.com/dynamic
to find out more about our dynamic wind uplift testing services or contact:
Daniel Thompson, Technical Sales, Construction
+44 (0)1782 764446
daniel.thompson@lucideon.com

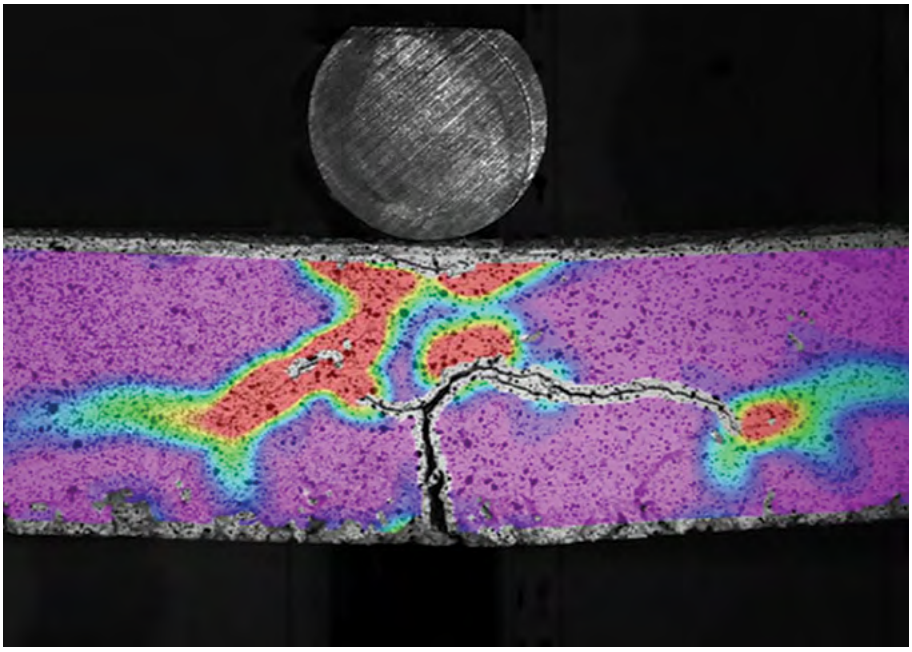
NEW SERVICE - 3DSTRAIN

We've launched a new Digital Image Correlation (DIC) testing service, 3DStrain, which allows materials to be analyzed under pressures and strains, generating in-depth data and visual imagery to monitor the distribution of stress.

The digital imaging technique can provide vital insights and understanding into performance, durability and failure analysis of a material. The technology allows analysis of most materials and any geometry, no matter how complex.

3DStrain is a mobile technology and testing can be performed on-site or in the field for larger or fixed structures. Products can be tested to failure or a non-destructive approach can be taken.

For more information about our 3DStrain testing service, visit:
www.lucideon.com/3dstrain



GRC AND FRC TESTING

Glass-fibre Reinforced Concrete (GRC) and Fibre Reinforced Concrete (FRC) are regularly used in architectural and civil engineering applications. Due to current and future large-scale construction and infrastructure contracts, it is highly likely that there will be a significant upturn in the use of these materials. GRC offers the prospect of light-weight cladding and reduced structural requirements of both frames and foundations, whilst FRC can provide improved long-term serviceability.

GRC comes in three grades and the specification and required properties are dependent on the individual components and conditions of use. Steel FRC has been used extensively since its invention in the 19th century. In the UK, steel FRC in industrial floors is a major application due to the considerable financial savings that can be made against supplying and fixing fabric reinforcement.

Polypropylene fibres can be used to reinforce concrete; it's not a replacement for reinforcement but can offer advantages, e.g. crack control. There is some controversy in this area as to whether modern fibres are able to enhance structural performance, e.g. in beam and pot flooring. Polypropylene fibre reinforced concrete can only be investigated by testing complete floor assemblages; at Lucideon, we're equipped and experienced to do this.

We're now offering both standard and bespoke testing of GRC and FRC materials and components. In particular, LOP and MOR determination using the 'complete bending test' to BS EN 1170-5 and the CMOD determination to EN 14651: 2005 + A1: 2007. Testing regimes applicable to beam and pot flooring, which are accepted approaches by the BBA and NHBC, are also available.

Contact **Dr Geoff Edgell**, Director and Principal Construction Consultant, for further information:

+44 (0)1782 764400

geoff.edgell@lucideon.com

BSI AND LUCIDEON COLLABORATION

We're pleased to announce that the British Standards Institute (BSI) has chosen Lucideon to act as its associate laboratory for new Kitemark schemes within the construction sector, and subsequently the launch of the first balustrades Kitemark scheme.

The collaboration will provide a simplified process for customers wishing to test and certify their construction products. Products bearing the internationally recognized Kitemark are identified as being safe and of quality.

'ENERGY SAVING' TECHNICAL PAPER

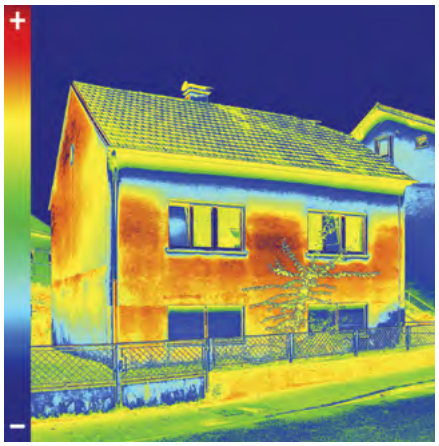
Our technical paper, 'Energy Saving: The UK Approach to Insulating the Fabric of Existing Masonry Houses', authored by Dr Geoff Edgell, Director and Principal Construction Consultant, is now available to download.

Within the paper, Geoff highlights the requirement to reduce energy waste from homes in the UK and discusses the methods engaged to try and increase insulation levels in existing stock, as well as evaluating their successes and short comings.

The technical paper was initially presented at the Twelfth North American Masonry Conference (12NAMC), University of Colorado, Denver, 17 - 20 May 2015.

Download the free technical paper at:
www.lucideon.com/construction

COMFORTABLE CONDITIONS IN BUILDINGS GUIDE



Our new guidance document, 'Creating Comfortable Conditions in Buildings' is now available as a free download.

The guide discusses the shortfall of current incentives for sustainable and energy efficient housing, and the potential of a 'whole-house' comfort rating to aid the efficiency of homes.

Sustainability and energy efficiency is a rapidly growing demand from industry. The guide examines the regulations that measure the functionality of a house as whole, and factors which need to be considered, including different approaches required for new builds, refurbishments and new, innovative dwellings that steer away from traditional construction materials.

Download the free guide at:
www.lucideon.com/construction

'BUILDOFFSITE' MEMBERSHIP

We are now a member of Buildoffsite, the UK-based business organisation that promotes innovation and off-site solutions for the construction industry.

Buildoffsite provides a networking and knowledge transfer mechanism to promote innovation through continuous improvement in materials use, process design and construction methods. Becoming a member of Buildoffsite will allow us to liaise with the construction industry through a new channel at a time when the sector looks to the future of advanced technologies and sustainable processes and materials.

Dr Geoff Edgell, Director and Principal Construction Consultant, said:

"Buildoffsite are offering a community styled collaboration for all areas of the construction industry. We think that their approach will help to promote innovation and eagerness between businesses in order to reach goals set for the construction industry.

"The task ahead for the construction industry is substantial. We need to become more innovative to reduce carbon emissions and material waste, and to find sustainable materials to work with. For that reason alone it's important for the industry to have a network where ideas can be shared to help realize the overall needs of the sector."

For more information about Buildoffsite, visit:
www.buildoffsite.com

www.lucideon.com/construction
+44 (0)1782 764428

NEW CHAIRMAN OF THE CLAY BRICK RESEARCH COMMITTEE

We're pleased to announce the appointment of John Renshaw, Group Technical Manager at Wienerberger Ltd, as Chairman of the Lucideon Clay Brick Research Committee. John will succeed Ian Walker who served as Chairman for the three preceding years.

The primary purpose of the Committee is to collaborate and communicate with our Heavy Clay Technology Partners in support of the sector. This includes adapting to the many external legislative and technological changes, from standards support and practical guidance, through to innovative projects specifically designed to strengthen sector knowledge.

Lucideon represents the UK on a number of construction related standards and regulatory committees, including CEN (Committee for European Standardisation) and BSI (British Standards Institution). From this involvement, we're able to offer up-to-date advice and guidance on standards and the regulatory and legislative framework connected with the construction sector, such as the European Code of Practice for the design of masonry and the European Standards for masonry units, mortars and ancillary components.

Further information about our Technology Partnership packages can be found at:
www.lucideon.com/partnership

6 OCTOBER
MIDLANDS CONSTRUCTION SUMMIT (MCS)
THE NEC, BIRMINGHAM

Come and see us at the MCS, we're exhibiting!

Organised by The Built Environment Hub, the MCS will be an informative and interactive event where the Midlands construction industry and associated supply-chain will gather to discuss the opportunities ahead in developing a clear and defined set of actions to address the UK Construction Strategy 2025.

Find out more about the Summit or book a place at:
www.builtenvironmenthub.org