



...making excellence a habit.™

Development of International Standard for Lean Constructio

Presented by : Coleman Tse



BSI, a Royal Charter Company



Benefits of LEAN



- 'Lean' in its simplest form means eliminating waste from everything we do.
- A key element of Lean is continuous improvement, so becoming Lean is an

Challenges

- How to assist the consistent development and application of LEAN tools across industry.
- How stakeholders, specifiers, industries and supply chain etc. can be benefited from the output of the LEAN research project
- Supply chain and tendering requirements concerns

Developing an international standard

What is a Standard?

- A set of **documented principles** agreed between multiple stakeholders
- **Developed and applied voluntarily** by technical experts and relevant stakeholders



A case Study – Development of BIM Standards

BIM USAGE BENEFITS	%	BENEFIT TYPE		
		VOTES	INTERNAL	PROJECT PHASE
1. REDUCED ERRORS AND OMISSIONS	41		★	
2. COLLABORATION WITH OWNERS / DESIGN FIRMS	35			★
3. ENHANCED ORGANIZATIONAL IMAGE	32	★		
4. REDUCED REWORK	31		★	
5. REDUCED CONSTRUCTION COST	23		★	
6. BETTER COST CONTROL / PREDICTABILITY	21			★
7. REDUCING OVERALL PROJECT DURATION	19		★	
8. MARKETING NEW BUSINESS	19	★		
9. OFFERING NEW SERVICES	14	★		
10. INCREASED PROFITS	14	★		
11. MAINTAIN REPEAT BUSINESS	13	★		
12. REDUCED CYCLE TIME OF WORKFLOWS	10			★
13. FASTER CLIENT APPROVAL CYCLES	9			★
14. IMPROVED SAFETY	7		★	
15. FASTER REGULATORY APPROVAL CYCLES	6			★

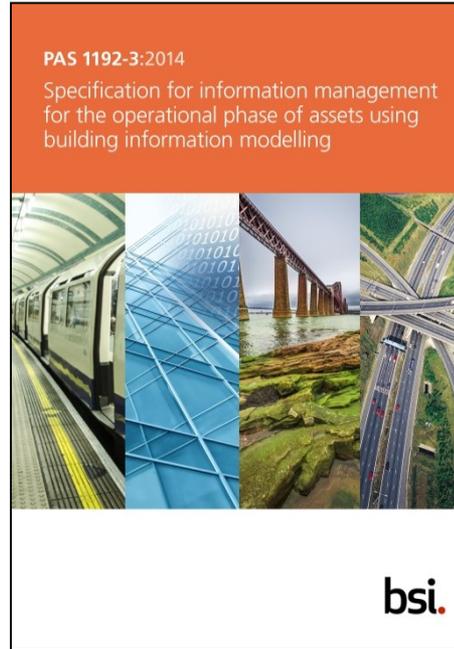
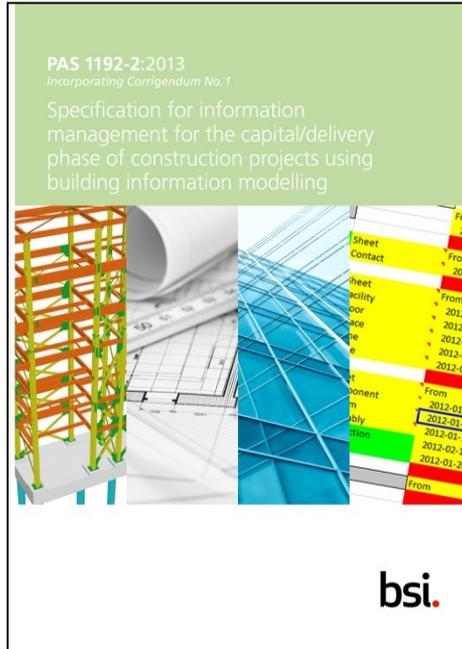
UK Government's BIM Strategy

"This Government's four year strategy for BIM implementation will change the dynamics and behaviours of the construction supply chain, unlocking new, more efficient and collaborative ways of working. This whole sector adoption of BIM will put us at the vanguard of a new digital construction era and position the UK to become the world leaders in BIM."

Francis Maude
Minister for the Cabinet Office



BIM Level 2 documents



- **PAS 1192-2:2013 and PAS 1192-3:2014** are both available for **free download** on the BSI shop

- **BSI provides other free BIM guidance too -**

<http://shop.bsigroup.com/forms/BIM-Reports1/>

**Capital / Delivery
Phase**

Operational Phase

PAS 1192-2

- PAS 1192-2 – Specification for information management for the capital/delivery phase of construction projects using Building Information Modelling
- Sponsor: Department for Business Innovation and Skills (BIS)
- Drivers for project: HMG mandate for all companies tendering for public sector work to achieve Level 2 BIM by 2016.
- Fit: BS 1192-2 on the Committee Roadmap, but required urgently. Lessons learnt during the implementation of the PAS by the Government early adopter projects will be fed into BS 1192-2
- Project delivery date: January 2013
- New deliverables: PAS 1192-3 (Operation phase)
- BS 1192-2 and BS 1192-3 in approx 2 years

Background

Building Information Modelling (BIM) is the process of generating and managing building data during its life cycle and involves representing a design as objects – vague and undefined, generic or product-specific, solid shapes or void-space oriented (like the shape of a room), that carry their geometry, relations and attributes. BIM design tools allow for extracting different views from a building model for drawing production and other uses.

The British Standards Institution (BSI) has undertaken committee work to develop a series of British Standards to assist the consistent development and application of BIM tools across industry. This has produced a roadmap for a series of standards related to BIM.

However, there is a need to speed up the standards development process in some areas to assist the UK government (Ministry of Justice in particular) to tender for specific large-scale construction works by April 2012 using BIM as a core tool to help reduce costs. Three specific standards areas are envisaged: a CAPEX standard, an OPEX standard, and a Libraries standard.

Comparison of typical PAS, BS and ISO Standards

PAS (Public Standard)	British Standard/national standards	ISO Standards
Sponsorship model	Publishing model	Publishing model
Acceptance process	Acceptance process	New work item proposal (NP)
PAS 0	BS 0	DIS (Draft International Standards)
6 to 12 months	12 to 24 months	24-36 months
Steering Group	BSI Technical Committee/Panel	ISO Technical Committee (TC)
Public consultation (1 month)	Public consultation (2 months)	Circulated to ISO members Consultation 5 months
Flexible design, print, distribution	Black and white	Black and white
Co-branded	Not co-branded	Not co-branded

Why PAS

The immediate need is for an industry-wide consensus-based standard to be available for CAPEX by April 2012. Given these tight timescales, the innovative state of play in BIM (i.e. shifting paradigms that make it difficult to understand the nature of being able to achieve consensus), and limited resource available amongst experts to draft standards, BSI proposes the development of a Publicly Available Specification (PAS), a fast-track consensus-based standard.

As stipulated in this proposal, **BSI aims to have a well-developed draft of the PAS available for public consultation by April 10th 2012** and full publication by July 27th 2012. This will enable the Ministry of Justice to tender for future work using the draft PAS as a base by the spring of 2012, with options to amend the tender depending on changes to the PAS upon publication.

It is then expected for the PAS to either be reviewed and revised within two years or alternatively to be used as a seed document for a full British Standard or ISO. Furthermore, this is a test-case model for future PASs for OPEX and Libraries.

Standardization Pyramid

High 3-4 years

Low

A tested route to national and international standards

Time

Control

Int'l Standards (ISO)

Regional standards (EN)

British Standards (BS)

Publicly Available Specifications (PAS)

Consortia standards

Private Standards

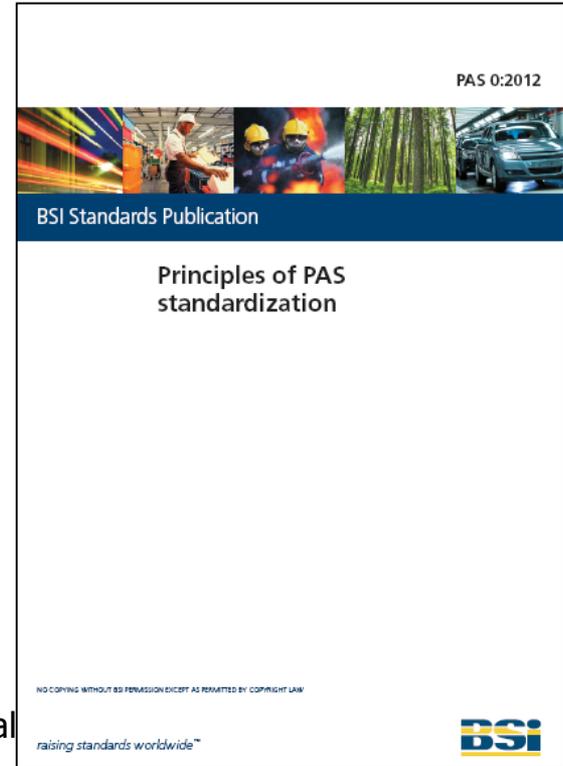
In house corporate procedures

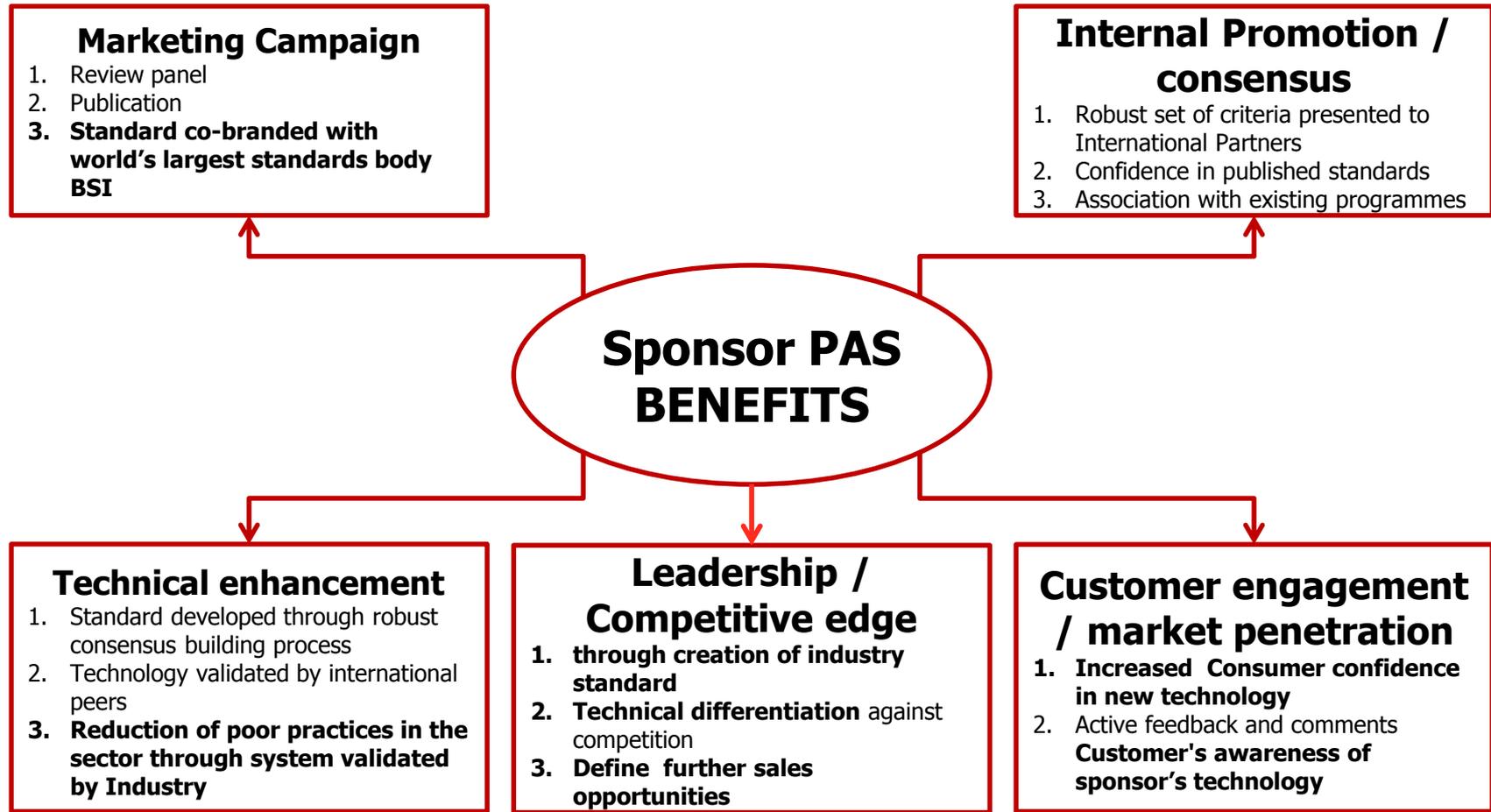
> 6 Months

High

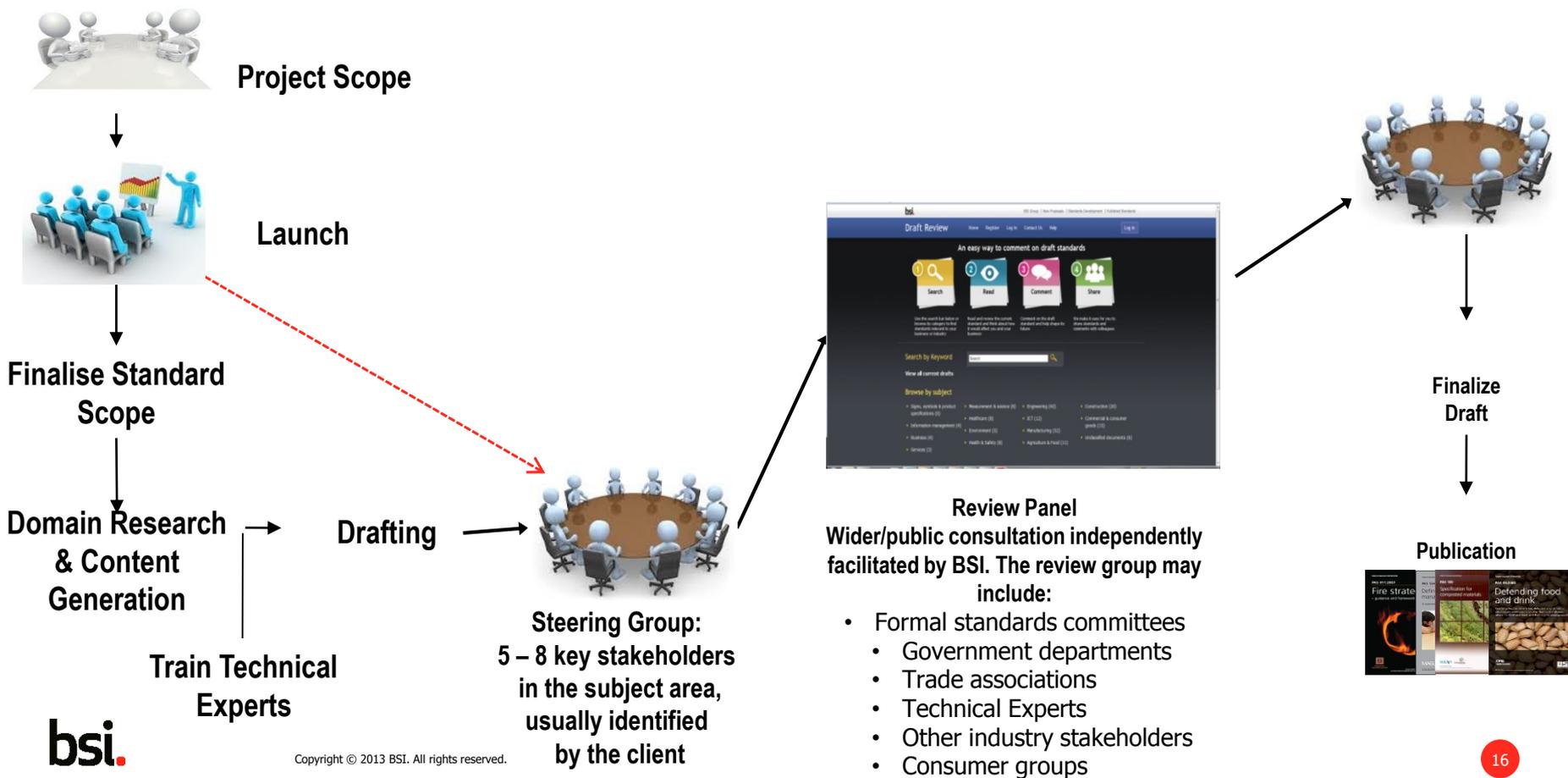
PAS 0 – A PAS for PASs

- **What is a PAS?**
- Fast, flexible and effective standard
- Tailor-made for each individual client
- Client sponsored solutions, developed to their needs
- Endorsed by BSI and co-branded with clients
- Developed in 6 to 12 months
- Guided and supported by a dedicated Project Manager
- Developed through a rigorous consensus-based process
- Enabled for the development of certification schemes
- Drafted in accordance with BSI/ISO drafting rules
- Potential for submission into formal national and international standardization arenas (i.e. BS, CEN and/or ISO) as a seed document
- A short initial lifespan (usually two years) before a formal review.





How does it work?



Sourcing: Blood diamond

Need: Exposure to ethical issue and quality issues

Project: Traceability in supply chain

- Establish a standard methodology for assurance of traceability in the supply chain
- Train suppliers and vendors along the supply chain on new standard

Benefits: Brand protection; underpin brand strategy & product mark; reputation



Fast Track Standards case studies related to food– Discussion

PUBLICLY AVAILABLE SPECIFICATION

PAS 220:2008

Prerequisite programmes on food safety for food manufacturing



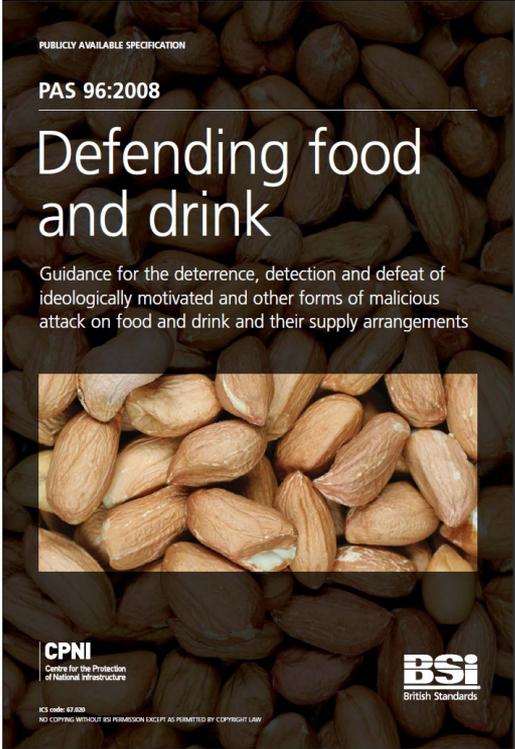

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PUBLICLY AVAILABLE SPECIFICATION

PAS 96:2008

Defending food and drink

Guidance for the deterrence, detection and defeat of ideologically motivated and other forms of malicious attack on food and drink and their supply arrangements




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PAS 223:2011

Prerequisite programmes and design requirements for food safety in the manufacture and provision of food packaging



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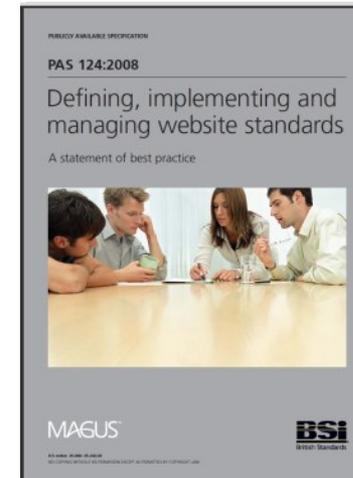
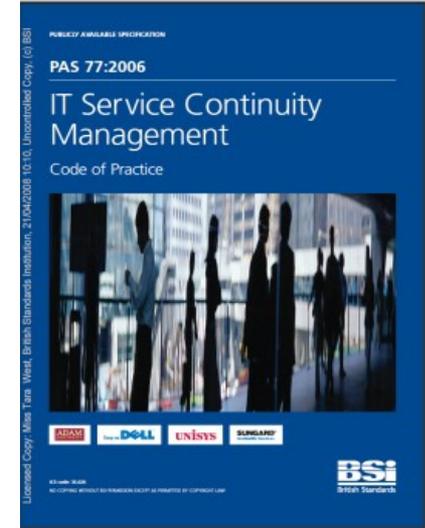
ICT sector

Need : In the absence of a formal standard, firms in the IT service continuity industry have had to make their own judgments as to how organizations should protect their IT networks from disruption.

Project: Bringing together a consortium of firms from across the industry to collaborate on defining best practice,

“We could have drawn up a specification ourselves – but it would have been just another opinion to add to the body of literature on the subject: it was important to have BSI’s Support and be able to draw on best practice from a wide variety of organizations”

Oscar O’Connor, adviser to Adam Continuity.



PAS Standards – Example for Healthcare sector

PAS 800:2010
Use of Dementia Care Mapping for improved person-centred care in a care provider organization – Guide



PAS 900:2010
Code of practice for wheelchair passport schemes



PAS 2015:2010
Framework for health services resilience





Automotive: Recycling of second hand engines (Kaiho Sangyo, Japan)

Need: Kaiho Sangyo wished to internationalize its testing method for and recycling of second hand engines and demonstrate its leadership in this field globally.

Project: Create a PAS underpinning their testing methodology for second hand engines

Benefit: Large exposure of new technology in the automotive sector (project still on-going)

Kaiho Sangyo Co., LTD.  SINCE 1959



Building Information Modelling Seminar Global BIM Standards Update and Next Steps

bsi.

According to the UK Government Construction Strategy published in 2011, full collaborative 3D Building Information Modeling (BIM) (known as Level 2 BIM) will be a minimum requirement for all centrally procured Government projects effective from April 2016.

As Building Information Modelling (BIM) is gaining its importance, playing an increasing role within the industry and could dramatically revolutionize the industry for the better, BSI has been focusing on establishing BIM in the UK by developing and publishing a suite of supporting Publicly Available Specifications and British Standards to support of the new requirement and are now collaborating and leading on the development of a number of European and international standards on BIM through both CEN & ISO, based upon our own Level 2 national Standards.

Why is it related to me?

Through a consultative and collaborative process, the new Certification Schemes have been designed to provide assurance to governments, regulators and specifies procuring construction projects and to help contractors with supply chain management solutions to ensure successful project management and delivery using BIM.

- ▶ Date: 9 October 2015
- ▶ Time: 2:00pm – 5:00pm
- ▶ Venue: G/F, CIC Kowloon Bay Training Centre
44 Tai Yip Street, Kowloon Bay, Hong Kong
- ▶ Admission: Free
- ▶ Media: English

BIM experts from the United Kingdom will explain :

- What is happening on BIM from a European and International perspective
 - Introduction to BSI Product Certification and the Kitemark
 - Engineering certification solutions for BIM through collaborative working
 - Architecture and framework of certification systems; Kitemark and Verification Certification
 - Benefits of BIM Certification to contractors, supply chain partners and specifiers
 - Next steps – BIM Certification for Asset Management PAS 1192-3
- Content of the program is subject to change without prior notice.



Registration:

Please scan the QR code and complete the form online.
Alternatively, please contact Ms. Irene Tse at +852 3149 3324 or email irene.tse@bsigroup.com

A confirmation e-mail will be sent to successful applicant.

Speaker

Emmanuel Herve

VP Standards & Professional Services, Asia Pacific, , British Standards Institution/
Managing Director, Hong Kong, British Standards Institution



Currently Managing Director Hong Kong and VP, Standards & Professional Solutions, Emmanuel Herve was previously Vice-President, Standards Business Development, Asia Pacific based in China in charge of embedding the standards business stream in the Region as well as business solutions, supply chain management in multiple sectors.

With 12 years' experience in advance advisory services, Emmanuel Herve held positions that include Head of British Standards Solution in London in charge of team responsible for the creation of sponsored fast track technical standards and the management of the International Projects team working of honor funded projects specialized in TBT, customs, quality infrastructures. Prior to working for BSI, he worked for a Management Consultancy based in Munich, Germany dealing with micro-finance, privatization and company restructuring.

Anthony Burd

Head Sector – Construction, British Standards Institution



Anthony heads up the construction sector at BSI Standards, where he leads a team overseeing BSI's construction & fire related technical committees. He has responsibility for BSI's construction sector publishing program, along with the promotion of the portfolio to national and international marketplaces. Anthony also identifies new areas of standardization via engagement with key stakeholders from across government and industry. He has more than 25 years' experience working in the construction industry, with experience of being both an enforcer, and a government regulator in relation to national Building Regulations.

Anthony is also an NHBC Council Member, and a recently appointed member of the UK Government's statutory Building Regulations Advisory Committee.

Andy Butterfield

Global Head of Construction, Product Certification, British Standards Institution



Currently the Global Head of Construction at BSI within the Product Certification business sector, Andy leads a team of certification professionals delivering services for a wide portfolio of construction products and services globally, through BSI's network of regional offices in 74 countries around the world.

As Global Head providing strategic direction and support, Andy is responsible for building and leading a team of certification professionals to deliver excellence to clients within the construction sector of the BSI Product Certification business. He is currently leading on the development of new Kitemark schemes to support with the implementation of digital technologies in the construction sector, such as Building Information Modelling (BIM).

With over 30 years of experience within quality assurance, testing and certification, Andy is a qualified Mechanical Engineer and ISO 9001:2000 Lead Assessor and has extensive experience of market development for certification programmes and systems within the Product Certification and Sustainable Construction sectors.

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