



# The sustainability of standards in contaminated land investigation

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# UK Site Investigation

1970's - Nuisance issue

1980's – Waste, Brownfield land - Political issue

1990's – Environment Act, EA /SEPA, Water - Financial issue

2000's – CLEA, Waste, Sustainability – A Way Forward? Moral issue? Scientific basis?

Regulators established to police and provide advice on select parts of it

Planning established as the mechanism to capture contaminated sites

1975-1989	1990-1999	2000-2009	2010 – date
<p>1976 Greater London Council Scientific Branch Bulletin No. 98</p> <p>1977 Department of Environment &amp; Welsh Office Circular 49/77 announces interdepartmental Committee on Redevelopment of Contaminated Land (ICRCL)</p> <p>1978 Love Canal NY declared federal emergency &amp; triggers Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)</p> <p>1979 Eastbourne Conference, including The 'Kelly Numbers'</p> <p>1980 Lekkerkerk, NL 1600 drums toxic waste discovered CERCLA (SuperFund) enacted</p> <p>1983 ICRCL 23/79 Redevelopment of sewage works and farms. <a href="#">ICRCL 59/83</a> Guidance on the assessment and redevelopment of contaminated land</p> <p>1986 Loscoe landfill gas explosion</p> <p><a href="#">ICRCL 18/79</a> Notes on the redevelopment of gasworks sites</p> <p><a href="#">ICRCL 61/84</a> Notes on the fire hazards of contaminated land</p> <p>DoE Circular 21/87 Development of Contaminated Land: Reminder that Contamination is a material consideration under planning</p> <p>DD175 Draft for Development Code of Practice for the identification of potentially contaminated land and its investigation</p>	<p>1990 H. of Commons Environment Committee Report: Contaminated Land (The [High] Rossi report)</p> <p>Environmental Protection Act 1990</p> <p>1994 DoE Paying for our past; Framework for Contaminated Land;</p> <p>CRIA SP 101-112: 12 Volume Technical guide</p> <p>CLR 3 Historic review</p> <p>CLR 4 Sampling Strategies</p> <p>CLR 7 Sampling statistics</p> <p>Cambridge Water v Eastern Counties Leather plc House of Lords</p> <p>1995 Environment Act introduces s57 into EPA1990; repeals s143 Registers</p> <p>DoE industry profiles links contaminants with industrial land uses</p> <p>1996 EU CARACAS Project</p> <p>BRE Digest 363 Sulphate</p> <p>2<sup>nd</sup> House of Commons Report SAGTA formed</p> <p>Environment Agency and Scottish Environmental Protection Agency</p> <p>1997 Revised draft Statutory Part 2A guidance issued</p> <p>Waste and Contaminated Land (NI) Order</p> <p>Land Quality Management Ltd set up</p> <p>1999 JISCmail contaminated-land-strategies first posting</p> <p>2000 CL-AIRE established</p>	<p>2000 Part 2A Environmental Protection Act (E&amp;S); SNIFFER Method</p> <p>Weston village, Cheshire HCBD (hexachlorobutadiene) incident</p> <p>2001 Part 2A (W)</p> <p>2002 CLEA &amp; SGVs published</p> <p>St Leonard's Court, Sandridge, Herts bromate &amp; bromide contamination of chalk aquifer</p> <p>2003 Updated SNIFFER Method</p> <p>2004 Loughborough Conference: Achievements &amp; aspirations</p> <p>CLR 11 Model Procedures</p> <p>PPS 23 Planning applications and land contamination: Guidance for developers and land owners</p> <p>2005 DEFRA Contaminated Land Advisory Note - CLAN 02/05 on SGVs</p> <p>2006 Compensation Act</p> <p>DEFRA discussion paper 'Assessing Risks from Contamination – A Proportionate Approach. Soil Guideline Values: The Way Forward'. LQM/CIH Generic Assessment Criteria [35 substances]</p> <p>2007 CRIA C665 Assessing risks posed by hazardous ground gases to buildings.</p> <p>2008 CIH Local Authority Guide to Ground Gas &amp; Ground Gas Handbook</p> <p>2009 Corby Group Litigation v. Corby Borough Council EWHC 1944. 2nd edition of LQM/CIH GAC. CIH Professional Practice Note Reviewing reports invoking oral bioavailability estimates</p>	<p>2010 Regional spatial strategies scrapped LQM/CIH Dose-Response roadmap</p> <p><a href="#">Sienkiewicz Stenikiewicz v Grief (UK) Ltd [2011] UKSC (Asbestos)</a></p> <p>2012 National Planning Policy Framework replaces PPG &amp; PPS documents</p> <p>Defra Contaminated Land Expert Panel set up</p> <p>Control of Asbestos Regulations Part 2A statutory guidance updated (E&amp;W)</p> <p>2013 Cyfoeth Naturiol Cymru formed</p> <p>BS 10175:2011+A1:2013 Investigation of potentially contaminated sites. Code of practice (Updates 2011, 2001 and DD1999)</p> <p>2014 Defra C4SLs based on 'Low Level of Toxicological Concern' published [As, Ni, BaP, Pb, Cd];</p> <p>CRIA C733 Asbestos in soil and made ground;</p> <p>2015 LQM/CIH S4UL generic assessment criteria based on minimal/ negligible risk published (85+ substances)</p> <p>2016 Law Society guidance on CON 29 &amp; CON 290 enquiries of local authorities</p> <p>Avenue Coking Works remediation largely complete</p> <p>2017 National Quality Mark Scheme (NQMS) launched;</p> <p>Geological Society Year of Risk Geological Society Contaminated Land Specialist Group launched</p>

# Site Investigation and Sustainability

**Site Investigation is driven by unknowns...**

Concentrating on the contaminants of concern will improve sustainability

What do you already know? What do you need to know?

What is the best way to find out? What other aspects come into play?

Accessibility

Competence

Reliance

Scientific Certainty

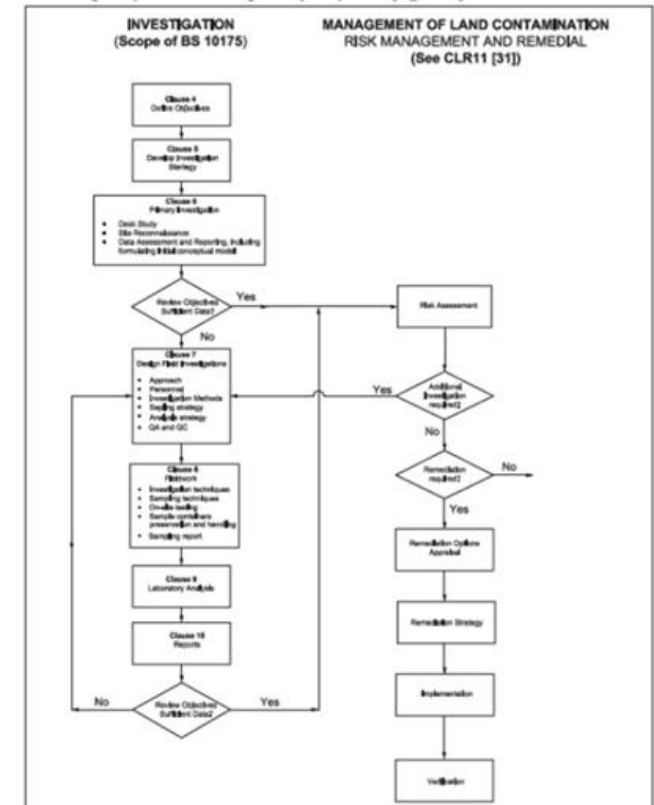
Repeatability

Sustainability



# Standards

- Why use or create them?
- Promotes good practice
- Encourages innovation and passes on knowledge
- Levels the playing field
- Provides surety to Clients and Regulators
- Confidence in findings
- Promotes professionalism
- Avoids re-inventing the wheel...
- Produced and accredited by a national or international bodies
- Produced by experts in the field
- Subject to scrutiny by fellow experts, interested parties and public





# Guidance Vs Legislation

- Most “standards” in our field are in fact guidance documents
- BS10175, BS8485, ISO18400
- “You should” not “you must”
- But... Usually expected to justify deviations from it
- Other bodies produce guidance, is it of equal relevance?
- Standards can also be suggestions or ways of doing things – i.e. guides to good practice
- Examples: AGS – Data Format, Asbestos, Site Investigation, Made Ground, Etc.



# Sustainability and Standards

Standards are supposed to promote sustainability

Following standards advice should be the most sustainable way of achieving their goals...

Compliance with legislation – little duplication of effort

Can be specifically related to sustainability:

ISO 18504: Sustainable Remediation

Can be present as a specific goal to achieve in many standards along with carbon reduction, cost effectiveness, etc. (9001,14001)

Sustainable doesn't always mean cheaper, but should ensure continuance

Clients often do not value Contaminated Land Risk Assessment, Investigation and Standards but view them as necessary evils driven by legislation... It can be so much more...



Investigation of potentially  
contaminated sites - Code of practice

# Sustainability

Can be designated as a goal during any part of the investigation, design and development process

Should ideally be in all of it from start to finish

Sustainable goals are not always the most cost effective in the short term but always will be in the longer term

Standards should suggest and reflect the most sustainable way of undertaking a specific task

Compliance with standards should therefore be sustainable by default

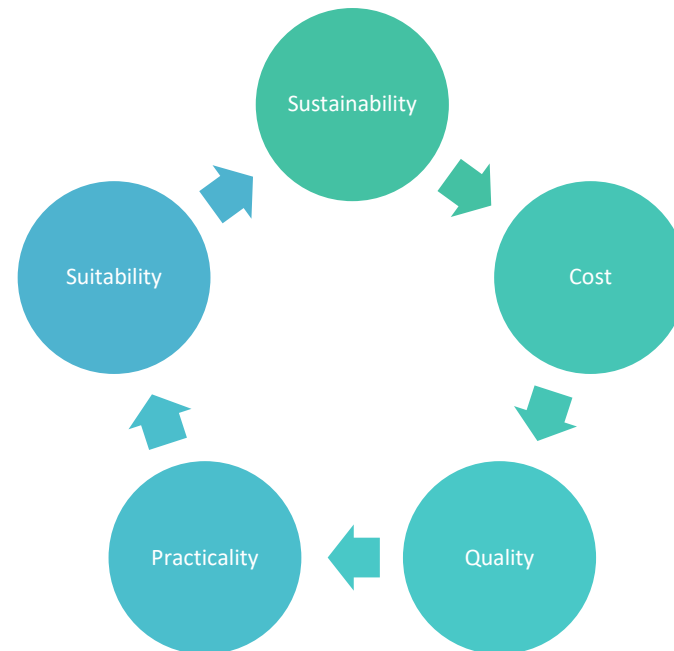


# Best Practice

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Working to standards and best practice guidance should in theory mean that, with newer iterations more so, some consideration is given to sustainability.

But as ever, there needs to be an equilibrium between:





# Best Practice

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- Context
- Data quality requirements
- Speed
- Cost
- Logistics/practicalities/location
- Matrix
- Accreditation
- Critical levels of interest



All considerations for delivering a fit for purpose and considered solution. And something every lab will be happy to discuss at project inception as to the most appropriate solution to a problem

# Conclusions

Investigations, models, assessments and data management all have good standards

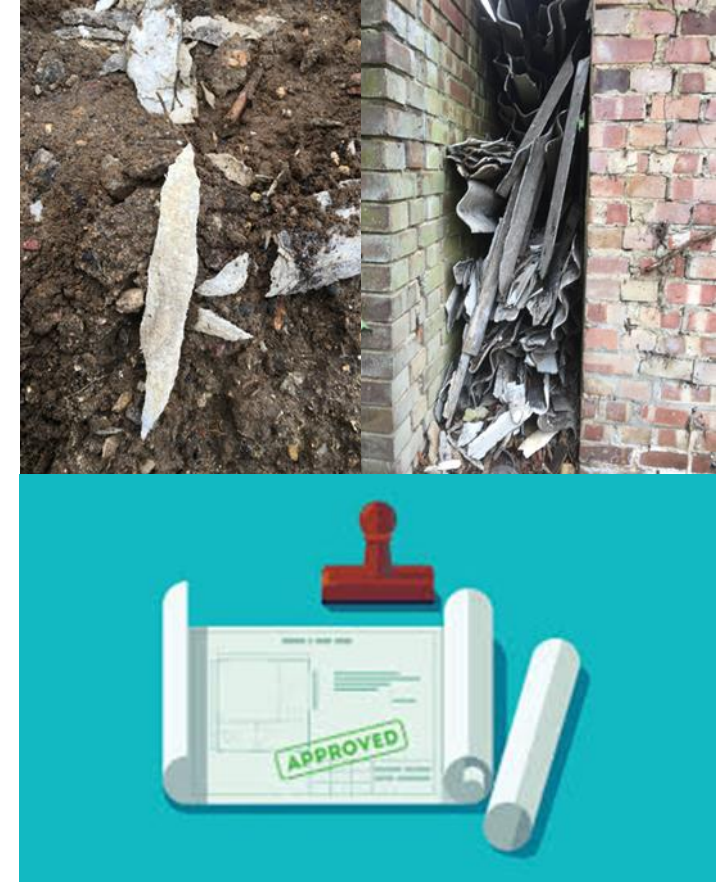
These are now designed to promote or aid sustainability as a project goal or requirement

Sustainability can (and arguably should) be built in to all parts of the development process

Sustainability specific standards are now available for certain other parts of processes – remediation / management

Compliance with standards should always be more sustainable by default

Compliance should also tick the boxes of the regulators



# Comments and Thoughts

Waste and asbestos are the current elephants in the room...

BS10175 should be your first port of call for site investigation

Should form part of a considered management strategy

CSM's are key

Over-conservative risk assessment is unsustainable

UK processes can be sustainable if set as a goal and the regulator is happy

Need to be scientific in your justifications and reasoning

Sustainability is not always less costly, but is always more effective in the longer term

Data gathering, retention and transfer will also help over time



# AGS Works In Progress

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Lead from ICE/Developers/Clients/Society to develop best practice in sustainability (including Climate change and resource use) and reduce costs...

Lead ultimately by AGS Board

Contaminated Land Working Group

Sustainability sub-group

Devising procedures and gathering evidence demonstrating best practice in industry

Educational policies and procedures – AGS Magazine articles / Conferences / on-line resources

Promoting general sustainability education and awareness for the industry -  
Training and Dissemination of best practice





# AGS Interactions between Sub Groups

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Combining with the Labs Group on joint issues of concern

More efficient use of laboratories and analysis

Areas covered: TPH, Containers, Energy use, Transport, Waste, Standards application, MCerts

Investigating the use of instruments and site monitoring as alternatives to staff site visits with the Monitoring and Instrumentation Group

Works: Joint article on principles of sustainability, further articles to follow

Data Format Group: AGS sustainability in data transfer, adoption as British Standard, BIMS promotion

Geotechnical Group: Site Works and liaison with Equipe and others





# From Here?

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BSI – continue to ensure Standards meet and consider sustainability criteria whilst compliance

Geological Society – Interaction with Contaminated Land Group and promotion within the society as a whole including QEJGH articles

Claire - Sustainability in assessments and QP validation, promotion of sustainability assessment as remediation best practice

EIC / JIWG – AGS already a member

Ciria – Possible guidance /promotion of best practice

SoBRA – Partnerships in sustainability

EA – Works ongoing re climate change / Sustainability



# The End?

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Sustainability will never end

Will change over time – and should do

Different definitions from different angles

Standards should be sustainable

Compliance with and use of Standards should be...

Good practice not always best practice

Remember the difference between standards and guidance

And guidance standards

All help gratefully received

