

Accreditation, brownfield and criteria Simple as ABC

The Government has announced a number of schemes for the housing sector including initiatives for housing developments on brownfield land. Brownfield development can be an emotive issue and communicating technical and scientific information to a non-specialist audience is not always that easy when trying to explain 'unacceptable risk'

and the new soil guideline criteria have introduced another tier in assessing risk. There have been calls for an accreditation or a Land Quality Assurance scheme to address the reference to 'competent person' made in the National Planning Policy Framework and to raise standards in the sector.

Quality mark for brownfield

The Land Forum comprises representatives from a range of key government departments, public bodies and other organisations who are associated with land condition and land use issues. The forum discuss a number of ongoing and future industry led initiatives and are currently reviewing an initiative to develop a National Land Quality Assurance (NLQA) scheme for the sector dealing with previously developed land (brownfield land).



The proposed scheme would be focussed on activities such as site characterisation, risk assessment, remediation option appraisal, remediation and the verification of remedial works which need to be carried out in line with good practice so as to meet legislative aims. The intention of the NLQA scheme is to provide a 'sign off' product which will provide confidence to those commissioning the works and to the regulatory authorities that the potential risks posed by land contamination have been assessed adequately and appropriate and proportionate actions taken to manage or mitigate these potential risks. A NLQA scheme is intended to satisfy the regulatory authority such as the Environment Agency or Local Authority that no additional action to ensure compliance with environmental legislation such as that under the Part 2A, planning

or Environmental Permitting regimes is necessary.

An assessment carried out under a NLQA scheme would demonstrate that the work has been carried out in accordance with commonly accepted technical approaches that constitute good practice, that capable people have carried out the relevant work, that key elements of the work have been peer reviewed and that the product is signed off by a suitably qualified and experienced competent practitioner.

The Specialist in Land Condition (SiLC) Register has put forward a position statement to the Land Forum and other bodies in the sector regarding a possible scope for the scheme and suggested that practitioners who are registered under the existing SiLC scheme are suitable competent practitioners and able to provide sign off. The Society of Brownfield Risk Assessment (SoBRA) is also considering developing a registration scheme for practitioners to sign off risk assessment aspects of a NLQA scheme.

Whilst a NLQA scheme will be voluntary it is hoped that Local Authorities and the environmental agencies of England, Wales, Northern Ireland and Scotland will recognise the value in a NLQA scheme and promote its use when dealing with the assessment of previously developed land.

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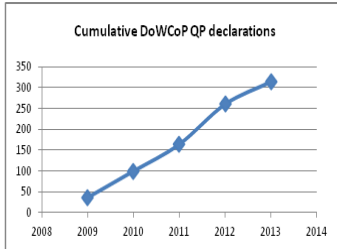
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Changes to the DoWCoP scheme



“The income generated by a declaration fee will allow CL:AIRE to publish more case studies, develop example project documents for example desk studies, conceptual site models, tracking system and verification reports, improve the website, develop online training courses, support an annual auditing process and report the findings...”

The Definition of Waste: Development Industry Code of Practice ([DoWCoP](#)) is a voluntary code developed by Contaminated Land: Applications in Real Environments (CL:AIRE) which has been operating successfully since 2009. It provides a pragmatic solution to the use of excavated materials including contaminated soils and made ground on development sites in a sustainable manner without involving waste legislation. Since its launch DoWCoP has supported an estimated beneficial reuse of over 16 million m³ of excavated material, which has led to a saving of millions of pounds to industry where such materials have been reused rather than disposed to landfill. The uptake of the use of the DoWCoP has increased significantly and as of the end of 2013 there had been 874 projects with an average reuse volume estimated to be over 20,000m³ for each project.

The scheme has been successful in the land development sector, supported by developers and their advisors, contractors and regulators. The Environment Agency’s position statement remains - *“The success of this approach requires a high level of professional integrity by those involved. If we subsequently find the Code of Practice is being used improperly so that human health or the environment is being put at risk we will withdraw this position. If that happens we will revert to requiring our input into case by case decision making.”*

In order to support the scheme further from October 2014 CL:AIRE has introduced a ‘declaration fee’ for each project and they have set out [terms and conditions](#) for the use of the DoWCoP. The declaration fee is a sliding scale fee per declaration which is dependent on the volume of materials reused by the project. The fee system charge is £10 per 1,000m³ and applies only to projects involving the reuse of more than 5,000m³ of excavated materials.

So for example a project involving the management of 50,000m³ of materials the declaration fee is £500. CL:AIRE has created a new online declaration form which is automatically delivered to CL:AIRE to review and ensure all necessary information is included and to confirm the Qualified Person is registered.

There is also a section to identify which project organisation has agreed to pay the declaration fee and once payment is received, CL:AIRE will issue an acknowledgement receipt. The declaration will still need to be emailed to the Environment Agency.

The income generated by a declaration fee will allow CL:AIRE to publish more case studies, develop example project documents for example desk studies, conceptual site models, tracking system and verification reports, improve the website, develop online training courses, support an annual auditing process and report the findings. Funding the scheme will also allow CL:AIRE to develop Version 3 of the DoWCoP. The intention of Version 3 of the DoWCoP will include extensions and improvements to the scheme including an expansion of the scope for the Direct Transfer scenario which is being considered to include excavated materials which are not ‘clean’ or naturally occurring, the reuse of manufactured soils e.g. with the addition of PAS 100 compost, if to be blended at a permitted site and to provide greater context of where the DoWCoP fits with other guidance documents for example the WRAP Quality Protocols and the Defra guidance on Definition of Waste on “by products”. It is also intended to publish a more streamlined procedure for small quantities of material arising from recovery of soils and for a specified type of use but with no requirement for a verification report, although there would be a need for a ‘paper audit’ carried out by a Qualified Person.

To submit a declaration under Version 3 of the DoWCoP the Qualified Person will need to demonstrate that they understand the procedures set out in Version 3. There is also the intention for the Qualified Person to have a more active role in preparing verification reports and involvement with particularly large receiver sites for example soil treatment facilities on former landfills. CL:AIRE consider that a greater involvement by a Qualified Person will provide greater confidence in the application of the scheme and that best practice has been followed in reusing the excavated material.

Housing development on brownfield land

The Campaign to Protect Rural England (CPRE) has published a new [report](#) in their Housing Foresight series entitled “Removing Obstacles to Brownfield Development”. A further report in this series entitled “Brownfield Development: Best Practice” is due to be published in December 2014. The stated objective of the series is to “provide evidence-based research papers that support innovative policy solutions to critical housing issues” Whilst CPRE clearly has an agenda with regard to restricting development on greenfield land they do raise some interesting points with regard to the development of brownfield sites.

Information collected from Local Authorities in 2010 identified that there were approximately 70,000 hectares of brownfield land which is unused and which may be available for redevelopment, much of this land is located in existing urban areas and approximately 35,000 hectares of this land is considered suitable for housing which equates to a capacity for over 1,500,000 dwellings. CPRE recognise that not all previously developed land should be considered suitable for development, particularly where such land is important for wildlife, historically significant or provides valuable open space and such land should be safeguarded from inappropriate development. The distribution of brownfield land is not necessarily in those parts of the country where more housing is needed, for example most of the brownfield land is reported to be in the north west of England. Whilst there has always been development on brownfield land it reached a peak in 2008 of over 80% of all new dwellings and has been in decline since following the scrapping of government targets for building on brownfield land and since the publication of National Planning Policy Framework.

CPRE put forward an assertion that the cost of purchasing brownfield land can be higher than greenfield land and that the fluctuations in the value of property can affect the viability of some developments on brownfield land. There are also physical barriers regarding the uncertainty of the development of brownfield land associated with abnormal costs for dealing with contamination, demolition and the removal of relict structures.

The cost of dealing with contamination is typically met by the developer through the planning system and whilst there is tax relief for certain costs associated with cleaning up contaminated land, the system for claiming the tax relief can be complex. CPRE has put forward proposals which they consider may assist in the development of brownfield land in the future through changes to taxation and funding initiatives, existing legislation and the planning system.

CPRE suggest charging council tax on uncompleted housing schemes on brownfield sites at the value of completed housing for which planning permission has been granted after two years with the intention of trying to make sure such schemes start to progress. They also suggest the introduction and use of tax increment financing (TIF) to fund development on brownfield land. The idea being that TIF will allow local government to fund new or improved infrastructure which will facilitate new housing schemes based on future anticipated tax revenues and which can then be used to finance the debt to pay for such projects and to pay back the debt over time once these revenues are realised. CPRE want Government to introduce a more favourable tax relief system to incentivise developers to choose brownfield land over greenfield land. They also put forward proposals that there should be Government-backed schemes whereby the Local Authority take on the liability of the development land following remediation, for example the Local Authority provides a certificate of ‘clean up completion’ or a covenant not to take legal action. Housing developers already use similar assurance schemes for example the National House Building Council (NHBC) provides a warranty for new build under their [Buildmark scheme](#), which includes cover should the house owner be served with a Statutory Notice regarding contaminated land. The NHBC use internal technical specialists who review and assess technical documentation provided by the developer regarding land quality including the assessment of contamination together with any remedial works which have to be carried out to a suitable standard before the NHBC provide warranty cover.



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Housing development on brownfield land

“The Government has recently introduced funding to assist local planning authorities for housing development on brownfield land under LDO...”

CPRE consider that not enough is being done under existing legislation to make the ‘polluter pays’ principle a preferred way of meeting the costs of remediation rather than the developer through the planning system. Although CPRE recognise that on historical industrial sites the original polluter may no longer be traceable they suggest there is an opportunity for more sites to be cleaned up under Part 2A of the Environmental Protection Act 1990 by issuing remediation notices. CPRE have somewhat over-simplified this approach, even if the original polluter is still in existence, under Part 2A contaminated land has to represent ‘the possibility of significant harm’ or the ‘significant possibility of significant harm’ before the regulatory authorities can take legal action. Although there is a lot of historical industrial land which is contaminated, if the site user (the receptor) is not exposed (the pathway) to the contamination (the source) then there is no ‘unacceptable risk’ hence there is no mechanism for the regulatory authority to enforce Part 2A and the remediation of the site. Furthermore even if a Remediation Notice was issued which often leads to a lengthy and costly legal process, and the notice were to be successful and the ‘polluter’ were to carry out the remediation, it is likely that the remedial works would be carried out to a standard suitable for the current land use for example a derelict former industrial site or possibly a commercial land use, and not to a standard suitable for a future land use such as residential. It will remain the responsibility of the developer to ensure that the quality of the land is suitable for residential development and even on site where there has been remediation under a Part 2A Remediation Notice the developer may need to carry out additional remedial works and

there may be no significant costs savings to the developer.

CPRE suggest the use of Local Development Orders (LDO) and Compulsory Purchase Orders (CPO) to facilitate more development of brownfield sites. LDO allow local authorities to extend permitted development rights for certain forms of development with regard to relevant local authority policies relating to the development and use of land in their area. LDO for residential development could be applied to specific brownfield sites and to grant planning permission only for residential development of a certain types and mix of housing subject to conditions.

The Government has recently introduced funding to assist local planning authorities for housing development on brownfield land under LDO to create 30 housing zones around the country on brownfield sites, with each zone large enough to deliver between 750 and 2,000 homes in partnership with private sector developers. The intention of this policy is to build more homes quickly on brownfield land. Land contamination remains a material planning consideration both in formulating the Local Development Framework documents and in development control, it also needs to be assessed for developments which require an Environmental Impact Assessment and it is stated in the National Planning Policy Framework (NPPF) that the development of any land should not result in it being capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990. Developing housing on brownfield land can be technically challenging, however when supported by a robust investigation and assessment can be dealt with cost effectively and in a timely manner.



C4(SL) or not C4(SL), that is the question!

A revision to the [Statutory Guidance](#) of Part 2A of the Environmental Protection Act 1990 was published April 2012 which introduced a category based system for dealing with risk assessment including the assessment of the 'significant possibility of significant harm' (SPOSH) whereby Category 1 sites are clearly contaminated and represent a high risk and Category 4 sites are clearly identifiable as low risk and not contaminated land. Defra commissioned a project (SPI010) to develop [Category 4 Screening Levels](#) (C4SLs) which published C4SLs for six contaminants (arsenic, cadmium, chromium VI, lead, benzo(a) pyrene and benzene). The development of C4SLs has been achieved by considering modifications to the toxicological and exposure parameters used within the Contaminated Land Exposure Assessment (CLEA) model. One of the most significant modifications in the development of C4SLs was to apply a toxicological threshold for contaminants referred to as having a 'Low Level Toxicology Concern' (LLTC) which is based on the principle of 'low risk' rather than applying the toxicological data which had been used to determine the Health Criteria Value (HCV) which is the approach that had been applied previously in the CLEA model to develop the Soil Guideline Values (SGVs) which is regarded as the principle of 'minimal risk'. A similar approach is also taken with the assessment of the carcinogen contaminants when considering the Excess Lifetime Cancer Risk (ELCR) exposure whereby a risk estimate of 1 in 50,000 is specified as 'low risk', where as a risk estimate of 1 in 100,000 or lower has been applied in previous soil risk assessment models as 'minimal risk'.

In SPI010 it is stated that "...As a consequence, toxicological assessments and reviews should only be performed by a suitably qualified individual who sufficiently understands the nature of the toxicological data...". In reviewing this report the Committee on Toxicology expressed a view that "...The framework and derived values would need to be robust in case of legal challenge...". So whilst it may not be advisable for contaminated land practitioners to evaluate the choice of the toxicological data when preparing a human health risk assessment, the methodology set

out in SPI010 regarding the exposure modelling is a good starting point for reassessing generic assessment criteria; after all it is realistic to expect a child in the 21st century to be playing in their garden every single day of the year which is the scenario applied in setting the current SGVs and GACs? Changing some the exposure pathways and frequencies of exposure has been common practice applied by practitioners when preparing "detailed quantitative risk assessment" and now there is guidance to support the application of this approach in setting GACs.

A set of GACs were produced by The Chartered Institute of Environmental Health (CIEH) in partnership with Land Quality Management Limited in 2009 (LQM/CIEH Generic Assessment Criteria (GAC) for Human Health Risk Assessment 2nd edition 2009) derived using the CLEA model. LQM/CIEH will be publishing a new report which includes soil guideline criteria for over 80 contaminants applying the exposure modelling methodology presented in SPI010 and these new criteria will be referred to as 'Suitable 4 use levels (S4ULs). These criteria will not be C4SL as the S4ULs will be based on existing toxicological data and not setting toxicological thresholds for contaminants such as LLTC or using lower ELCR exposure. It is expected that the values determined for the S4ULs will be greater than the GACs published previously as a result of modifying the exposure modelling methodology. The S4ULs will be prepared for generic land uses to include residential with and without home grown produce, allotment, commercial and public open space. Public open space is considered under two scenarios, one which is a grassed area of up to 0.05 ha, with 50% bare soil, used regularly by children and close to residential homes so that materials can be tracked back to these properties and the other is park type open space greater than 0.5 ha, which is predominantly grassed, has a children's play area and is used for activities such as dog walking.

The S4ULs are expected to be published in December 2014.



"LQM/CIEH will be publishing a new report which includes soil guideline criteria of over 80 contaminants..."

The use of C4SLs in the planning regime

To meet the need for more housing in the UK it is necessary to build on brownfield land as discussed in a previous article (page 3). There are many advantages in doing so and it is encouraged by Government. So why is there such concern surrounding this issue? There have been occasions whereby contamination has been identified on an existing housing estate leading to headlines in the press such as 'toxic time bomb' and 'poisoned gardens' and clearly living on land which was historically industrial land use can be an emotive issue. Dealing with land contamination has been a material planning consideration for several decades and there has been published guidance to support assessment. Communicating technical and scientific information to a non-specialist audience can be difficult and it is not helped by the range of wording used in various policy and guidance documents, for example reference to 'minimal risk', 'low risk', 'unacceptable risk' 'safe development' and 'suitable for use' and in contaminated land legislation reference is made to the 'possibility of significant harm', significant possibility of significant harm' or for risk to the water environment the 'significant possibility of significant pollution of controlled water'. To assist in making a judgement on the risk posed by land contamination soil guideline values for certain contami-

nants in soil were published as long ago as 30 years and there have been changes to these guideline values as more robust risk assessment models have been developed and updated toxicological data becomes available. The principles have remained broadly similar whereby soil with contamination above a certain concentration and coming into contact with people by dermal contact, ingestion or inhalation may result in a risk to human health. A simple approach to dealing with this contamination would be to remove the contamination (the source) taking contaminated soils off site, or treating contaminated soil so that the concentrations of the contaminants become lower than the guideline values or can no longer be mobilised or the pathway between the contamination and the site user (the receptor) is broken for example covering the contaminated soils with clean material. Each of these approaches has 'pros' and 'cons' and for a developer the costs associated with different approaches need to be considered so that the development is financially viable.

The local planning authority need to interpret policy and they rely on guidance documents and guideline criteria to assist when reviewing site assessment reports. The situation is not helped by there being slightly different approaches to dealing with land contamination under the planning system and under

statutory guidance for Part 2A legislation although the regimes are inter-linked through the National Planning Policy Framework which states that "...after development, as a minimum, land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990..." and that "...Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner...".

Category 4 screening levels (C4SL) soil guideline criteria were developed following the revised Part 2A Statutory Guidance and on the basis that C4SLs could also be used under the planning regime. This has led to differing advice being issued from professional institutions, government agencies and departments and disagreements among practitioners in the sector on how the criteria should be applied. The Chartered Institute of Environmental Health (CIEH) issued a position statement in July 2014 in which they state that "Some developers may nevertheless take their cue from the C4SLs to challenge established practice and cut back on remediation to reduce costs". Defra's view is that C4SLs could be used under the planning regime. A point raised in a letter from Defra to all local authorities issued in September 2014 and Defra suggested that this opinion is referenced on the Department of Communities and Local Government (DCLG) planning practice guidance [website](#) regarding

land affected by contamination although DCLG make reference only to the policy companion document published by Defra considering the use of C4SLs.

So what about the introduction of the S4ULs? Given the number of contaminants for which S4ULs will be developed including all the C4SLs except lead, it is likely that these criteria will be the soil guideline criteria of choice used to assess contaminated soils under the planning regime. There may however be some confusion should the values be significantly different to C4SLs particularly if more C4SLs are developed - although Defra have no plans to develop more C4SLs others in the sector may choose otherwise.



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