HOUSE OF COMMONS ENVIRONMENTAL AUDIT COMMITTEE

INQUIRY INTO SOIL HEALTH

Evidence submitted by Smart Growth UK

January 2016

Introduction

Smart Growth UK is an informal coalition of organisations and individuals interested in promoting the Smart Growth philosophy in the UK.

The Smart Growth concept, pioneered with great success in North America, is an holistic ethic of spatial, transport and community planning which aims at long-term sustainability rather than short-term gain. It has several aspects, but the principle most relevant to this inquiry is that of planning compact communities. "Smart Growth promotes well-designed, compact, functional communities and rejects land-hungry sprawl and wastage of greenfield land," say the principles agreed by the coalition in 2008.

In this response, therefore, we will focus on selected questions concerning the need to protect healthy soils from degradation or destruction by development and to promote a preference for brownfield land for development, where suitably located and appropriate, and the importance of reclaiming and remediating the soils on derelict and contaminated sites to facilitate redevelopment and for their own sake. We consider in particular the two issues of soil sealing and land contamination.

This evidence is specifically supported by the following organisations:-

British Land Reclamation Society
Chartered Institute of Environmental Health
Environmental Protection UK

How could soil health best be measured and monitored?
See below.

How could the Government develop a strategy for tracking soil health? -
See below.

What are the benefits that healthy soils can provide to society?
Soils provide a wide range of ecosystem service functions. These include production of food, water, timber and fibre and flood control. Soils support directly and indirectly most terrestrial biodiversity, both above and below the surface. Soils control the flow of precipitation to both surface and groundwater, evening out supplies and mitigating flooding. They can help regulate microclimates in urban environments and healthy soils can, potentially at least, sequestrate prodigious amounts of atmospheric carbon. Farm soils also provide ecological services for cities, including recycling urban wastes such as sewage sludge and compost. Soils also support the intangible but important benefits that countryside and open space offer people.

What are the consequences of failing to protect soil health for the environment, public health, food security, and other areas?

Soil Sealing Soil sealing is the covering of land and soil by impermeable artificial material and includes building development and transport infrastructure such as roads or airports, etc.. The process is almost always destructive to the soils so sealed, preventing them carrying out most, if not all, their ecosystem service benefits. Very occasionally, sealing may prevent rainwater mobilizing the contamination within the soil, but in the vast majority of cases there is no benefit to the soils and huge damage to the environment.

Land contamination Land contamination can threaten human health, the natural environment (including animals and crops), the water environment and buildings and their services. Sites which are contaminated, or which it is believed may be contaminated, present obstacles to their reuse as the perceived difficulty, inconvenience and costs involved in their investigation, risk assessment and, if need be, remediation, may be considerable. Although these obstacles may not be as great as feared, left unaddressed, contaminants may continue to pollute ground and surface water and adjoining land, they may threaten the health of those who use the sites or live or work beside them and their dereliction may blight the local economy, environment and society. Work by Durham University in 2014[1] indicated that derelict land, of itself, can have a deleterious effect on local people's health. Where contamination is known or suspected, this effect is likely to be worse; work done jointly by Glasgow University and the British Geological Survey, published in 2013[2], showed a statistically significant association between soil metal content and respiratory illness which the authors describe as `interesting` given the contribution soil may make to airborne particulates, although the study did not actually measure airborne metals. DEFRA has said that though 'it is inherently difficult to prove causality…there are good science-based reasons to be concerned that some sites pose significant risks [i.e. to human health] from long-term exposures'[3].

What measures are currently in place to ensure that good soil health is promoted?

Soil Sealing There is no UK-wide legislation or strategy to restrict soil sealing and what protection there is comes via weak prescriptions in the planning system (see below). In 2006, the European Commission published a Soil Thematic Strategy based on four pillars – increasing public awareness, improved knowledge, soil protection and legislation. It estimated the costs of soil degradation across the EU at the time as:-

- erosion €0.7-14bn
- organic matter decline €3.4-5.6bn;
- compaction – no estimate possible;
- salinization €158-321m;
- landslides – up to €1.2bn per event;
- contamination €2.4-17.3bn;
- sealing – no estimate possible;
- biodiversity decline – no estimate possible.

The Strategy was adopted by the EU in 2007. Contained within it was a proposal for a European soil framework directive[4] which proposed "an approach to soil sealing to ensure a more rational use of land in accordance with Article 174 of the EC Treaty and to maintain as many soil functions as possible. Identification of areas at risk of erosion, organic matter decline, salinization, compaction and landslides, and establishment of national programmes of measures".

The draft directive noted: "Sealing is becoming significantly more intense in the Community as a result of urban sprawl and increasing demand for land from many sectors of the economy, and this calls for a more sustainable use of soil. Appropriate measures are needed to limit soil sealing, for instance by rehabilitating brownfield sites, thus reducing the depletion of greenfield sites. Where sealing does occur member states should provide for construction and drainage techniques that would allow as many soil functions as possible to be preserved." It would have required member states to: "take appropriate measures to limit sealing or, where sealing is to be carried out, to mitigate its effects in particular by the use of construction techniques and products which will allow as many of those functions as possible to be maintained".

The European Commission developed *Guidelines*[5] on soil sealing following concerns expressed, including adverse effects on the natural water cycle. The *Guidelines* showed that detected land take between 1990 and 2000 across the European Union was around 1,000km² annually and settlement increased by 6%. From 2000 to 2006, there was a small decrease in the rate of soil sealing to 920km² each year. In just 16 years, therefore, Europe's urban footprint expanded 9%. Total sealed area across Europe was estimated to be 100,000km² or around 200m² per citizen.

The draft directive attracted strong opposition from European farmers and there was also disquiet among UK contaminated land professionals about the degree of prescriptivity in its approach, and although they accepted that several member states may require stronger

legislation in the land contamination field, there was concern about the ability to provide the level of resource implied. Faced with a continuing "blocking minority" at the European Council, the Commission abandoned the draft directive in 2014 but stated it remained committed to its objectives and adopted the *7th Environmental Action Programme*[6]. This provides that, by 2020: "land is managed sustainably in the Union, soil is adequately protected and the remediation of contaminated sites is well underway" and committed the EU and member states to: "increasing efforts to reduce soil erosion and increase organic matter, to remediate contaminated sites and to enhance the integration of land use aspects into coordinated decision-making involving all relevant levels of government, supported by the adoption of targets on soil and on land as a resource, and land planning objectives". It also stated that: "The Union and its member states should also reflect as soon as possible on how soil quality issues could be addressed using a targeted and proportionate risk-based approach within a binding legal framework".

The *7th EAP* admitted soil contamination and sealing are persistent problems but, to date, no proposals have been put forward to meet this commitment. With the Commission in deregulatory mood, it is likely any action in this direction in the short-term will need to be taken by member states, including the UK.

The 2009 DEFRA soil strategy *Safeguarding our Soils – A Strategy for England*[7] does mention soil sealing and says it is caused by pressure for development. It claims that "Some degree of soil sealing is an unavoidable consequence of development. The planning system provides a framework within which consideration can be given to the environmental, economic and social costs and benefits of the development and use of land. The planning system is also increasingly recognising the importance of mitigating the impacts of soil sealing, particularly in relation to urban drainage and maintaining green infrastructure". Sadly, it is the case that the planning system, especially in England, has become less and less of a framework to prevent soil sealing since 2009.

Current UK planning policy contains little in the way of protection against soil sealing.

England's *National Planning Policy Framework*[8] notes the importance of "protecting and enhancing… soils" and of preventing development causing unacceptable risks of soil pollution (Paragraph 109). It says local plans should safeguard "the long-term potential of best and most versatile agricultural land and conserving soil resources". It makes no mention of soil sealing and, indeed, in practice has tilted planning policy since its adoption in 2012 towards increased soil sealing to stimulate house building on greenfield land. It has recently been persuasively argued[9] the *NPPF* was "set up to fail" as far as protection of greenfield land was concerned, with the strategic housing market assessments it demands deliberately designed to produce more housing than areas actually needed.

Quantifying the degree of recent sprawl is difficult as the Government stopped the collection of data under the National Land Use Database in 2011, with the consequence of obscuring the increasing rate of urban sprawl and soil sealing brought about by new

planning policies in England designed to increase the rate of greenfield house building. A large trunk road building programme and possible airport expansion also threaten significant increases in areas of soil sealed.

Scotland's *Third National Planning Framework*[10] (currently under review) notes that Scotland's principal physical asset is land and that the most productive soils extend along the east coast and across the central belt to Ayrshire. It notes too that peatlands store 1.6 billion tonnes of carbon. *Scottish Planning Policy*[11] advises: "avoiding over-development, protecting the amenity of new and existing development and considering the implications of development for water, air and soil quality" (Paragraph 29). It contains some provisions on protecting peat soils and also says the planning system should seek to protect soils from damage such as erosion or compaction (Paragraph 194). It does not mention soil sealing.

Planning Policy Wales (Edition 7)[12] says the functions and benefits of soil should be promoted (Paragraph 5.1.3). Northern Ireland's *Strategic Planning Policy Statement*[13], however, contains a rare reference to soil sealing, saying: "In managing development, particularly in areas susceptible to surface water flooding, planning authorities should encourage developers to use sustainable drainage systems (SuDs) as the preferred drainage solution. Such systems are widely used in other UK jurisdictions and have been shown to be more effective than traditional piped drainage in reducing surface water flooding as well as providing other environmental, economic and social benefits. Furthermore using permeable materials for hard landscaped surfaces in new developments can reduce soil sealing."

Most planning policy makes some kind of nod towards protecting agricultural land from development, but in practice local authorities seldom attach great weight to this and planning inspectors even less. Everywhere, increasing house building is the central objective and the question of how the land is to be protected which will supply their inhabitants with food and water and protected from flooding in the long-term is seldom, if ever, asked.

Land contamination A very high proportion of the remediation of land contamination has always been carried out by land owners and/or developers as part of their work to develop or redevelop sites. However, this only results in the remediation of that minority of sites for which development proposals are made and for which the expected return will cover the cost of the remediation work, in addition to the cost of the development itself and still leave a profit for the developer. There is no doubt that this has led to some inadequate remediation in the past, and the need for some redeveloped sites to be revisited by local authorities more recently.

There are many cases, however, where the investigation of potential contamination and its remediation where it is confirmed is not covered by potential development returns, either because the sums do not add up or the site is not under consideration for development anyway, particularly where it has already been developed. The contamination may be suspected of threatening human health or the environment in the long-term, or has been

shown to be doing so; Part 2A of the Environmental Protection Act 1990, implemented after opposition from the property industry only in 2000, is intended to cover such cases.

Under Part 2A, local authorities have a duty to seek out land which is "contaminated" in a defined sense and to ensure its remediation by appropriate means. The costs of that (though not of initial investigation) are borne under a hierarchy of liability, primarily by the original polluter. But where such a party cannot be found (for example, where the pollution is very old or a company has been dissolved), legal responsibility falls on the current land owner or, finally, on the local authority. Local authorities also have "hardship" powers to meet costs that fall on householders where they are judged unable reasonably to afford them, though some councils have, in some cases, recently struggled to find such funds.

Funding for such work by local authorities has always come from the government, initially in the form of Supplementary Credit Agreements but, since 2006 in England, as capital grants through the Local Authorities' Contaminated Land Capital Programme. This was initially administered by DEFRA but, since 2010, by the Environment Agency. This provided in excess of £10million annually, but has been run down and DEFRA has now announced that the funding will cease next year. Meanwhile, it has been cut it to a mere £500,000 per year, reserved for "absolute emergency cases" and for "on-going remediation projects of the highest priority". As the mean value of remediation projects approved in recent years has been around £106,000, that will clearly not stretch very far and indeed £340,000 of the £500,000 in 2014-15 was spent on just one scheme. Once the funding ceases, from 2017, this will provide a powerful disincentive to local authorities even to begin investigations into a potentially contaminated site without having first identified an appropriate third-party able to pay for remediation.

Scotland, Wales and Northern Ireland have not had dedicated central funds specifically for local authority land contamination work, though public funds have sometimes been made available through other funding streams such as Scotland's Vacant and Derelict Land Fund.

Government support for local authorities' performance of their statutory duties in this area has seldom been wholehearted, however. Soon after the commencement of Part 2A, the Environment Agency (in which most of the historic expertise resided) closed its specialist Groundwater and Contaminated Land Centre and, despite having been paid through additional grant-in-aid to provide training to local authority staff, never did so. The Agency also did not deliver expected technical guidance, in the form of the set of "soil guideline values", on which determination of whether land is "contaminated" was intended to hinge. Several years were spent in the mid-2000s addressing this problem, with a Soil Guideline Values Taskforce established, an unsuccessful intervention by the Cabinet Office and long discussions involving DEFRA, the Environment Agency, the Health Protection Agency etc. still failing to resolve the issue.

DEFRA imposed revised Statutory Guidance in April 2012 with a new, qualitative test together with a number of other changes. Risk assessment of land contamination is an

extremely complex process but the new guidance has not secured the degree of support that might have been hoped for. Arguably, it also raised the bar on what is regarded as "contaminated" so as to reduce the number of potentially contaminated sites, along with the degree of remediation sites require and the cost of that. Nevertheless, according to a DEFRA-commissioned report based on work by Cranfield University and CL:AIRE[14], at the end of 2013 over 10,000 potentially contaminated sites awaited detailed inspection by local authorities.

And what further measures should the Government and other organisations consider in order to secure soil health?

Soil Sealing There is plainly a need for the UK Government and the devolved administrations to make provision to limit, and even reverse, the current rate of soil sealing. The primary route for this should be the planning system and central planning guidance should require local planning authorities, through their local plans and development control work, to restrict, or eliminate, increases in the proportion of their land area which is sealed. There needs to be a national inventory of sealed land and regular monitoring.

The Government and devolved administrations also need to consider the requirement to limit soil sealing in their own infrastructure and development work. Road and airport building and other forms of major infrastructure are particularly significant causes of soil sealing so bodies like the Infrastructure Planning Commission and others involved in major infrastructure need to review their policies to limit or mitigate sealing.

Land Contamination

The Government should reintroduce a programme of funding for local authorities and government agencies to investigate, address and improve the condition of the worst contaminated sites.

What role (if any) should soil health play in the Government's upcoming 25 year plan for the natural environment?

The health of soil is as fundamental to the health of the terrestrial natural environment as is the health of other media – air and water. It should enjoy equal attention.

[1] Clare Bambra, Steve Robertson, Adetayo Kasim, Joe Smith, Joanne Marie Cairns-Nagi, Alison Copeland, Nina Finlay, and Karen Johnson: *Healthy Land? An Examination of the Area-Level Association between Brownfield Land and Morbidity and Mortality in England* (*Environment and Planning A*, February 2014; vol. 46, 2: pp. 433-454)

[2] Morrison S et al: *An initial assessment of spatial relationships between respiratory cases, soil metal content, air quality and deprivation indicators in Glasgow, Scotland, UK: relevance to the environmental justice agenda* (*Environ Geochem & Health*. 2014; 36(2): 319–332)

[3] *Simplification of the contaminated land regime: impact assessment*, (DEFRA, 2011)

[4] *Proposal for a Directive of the European Parliament and of the Council establishing a framework for the protection of soil and amending Directive 2004/35/EC*

[5] *Guidelines on Best Practice to Limit, Mitigate or Compensate Soil Sealing* (Luxembourg: Publications Office of the European Union, 2012)

[6] *DECISION No 1386/2013/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 20 November 2013 on a General Union Environment Action Programme to 2020 'Living well, within the limits of our planet'*

[7] *Safeguarding our Soils – A Strategy for England* (DEFRA, 2009)

[8] *National Planning Policy Framework* (DCLG, 2012)

[9] Housing Vision and Tibbalds Planning and Urban Design: *Smarter SHMAs: A Review of Objectively Assessed Need in England* (London: Campaign to Protect Rural England, 2015)

[10] *Third National Planning Framework*, 2014

[11] *Scottish Planning Policy*, 2014

[12] *Planning Policy Wales (Edition 7)*, 2014

[13] *Strategic Planning Policy Statement for Northern Ireland*, 2015

[14] *Examination of Contaminated Land Sector Activity in England, Science Project 1011,* (DEFRA, June 2014)