The Environment, Food and Rural Affairs Committee inquiry: Future flood prevention
Evidence submitted by the Landscape Institute, 15 March 2016

1. Background

1.1 The Landscape Institute (LI) is the royal chartered body for the landscape profession. A professional organisation and educational charity, we work to protect, conserve and enhance the built and natural environment for the public benefit. The LI represents over 5000 landscape architects, planners, designers, managers and scientists. In recent years the profession has become increasingly involved in supporting the sustainable management of water at all scales, and particularly the ways of planning, managing and designing with water to reduce flood risk, create more resilient and attractive places to live, improve biodiversity, all whilst understanding the need to provide good value for money.

1.2 Recent flood and drought events have exposed the UK's lack of resilience. This type of extreme weather is set to continue, our existing infrastructure cannot cope and, as yet, we have failed to implement a comprehensive water management programme in the UK. Government estimates the cost of flooding in England as around £1.1bn annually[1]. The floods that occurred following the storms in December 2015 have been estimated to have caused in excess of £5bn worth of damage[2]. Statistics from the Environment Agency[3] show that there are currently 2.4 million properties in England at risk of flooding from the sea or rivers, with 748,000 of these predicted to have at least a 1% annual likelihood of experiencing flooding. The statistics also estimate that 3 million properties are at risk from surface water flooding, with 772,000 of these being at or above the 1% annual likelihood level.

1.3 Despite this alarming data, and although we have the means to protect ourselves from future flooding, communities repeatedly find themselves suffering the consequences of government inaction, a lack of long-term thinking, inadequate resourcing and an unwillingness to listen to the professionals with the skills needed to help overcome this critical challenge.

Please note that this evidence submission responds to questions two, three and four of the Terms of Reference.

2. Protecting communities and infrastructure: How adequately do defences protect communities and agricultural land from floods and do current funding arrangements target spending in the right way?

2.1 Funding arrangements must be adapted to enable better value, long-term investment through the planning, development and delivery of a more integrated approach towards flood risk management. This should include the integration of measures to reduce flood risk into existing

1 House of Commons Library Standard note: *Flood defence spending in England*, Standard Note: SN/SC/5755
2 https://home.kpmg.com/uk/en/home/media/press-releases/2015/12/flooding-economic-impact-will-breach-5bn.html
3 Environment Agency (2014) *Flood and coastal erosion risk management Long-term investment scenarios* (LTIS) 2014. Bristol.

land uses and assets, for instance, through river and floodplain restoration and by increasing forest and woodland cover, as well as by investing in traditional engineering-based flood risk infrastructure.

2.2 At present funding arrangements are too disjointed, dealing with flood risk and river and floodplain restoration as if they are for different purposes. A more integrated approach to catchment planning and development would lead to better value for capital investment, for instance through the appraisal and design of multi-benefit schemes which provide year round benefits rather than single use structures which create long-term liabilities. To achieve this will require greater use of landscape planning and design skills and improved cooperation between the various stakeholders involved.

2.3 As referred to in paragraph 2.2, new and existing flood risk infrastructure can bring significant revenue liabilities, despite only being utilised for short periods during unusual or extreme weather events. New flood risk infrastructure also requires significant partnership funding under Government spending rules. Match funding is therefore more likely to be provided by partners if investment is linked from the outset with a range of additional benefits, such as climate change adaptation and mitigation, the provision of accessible green space, and associated benefits, such as improved public health and the conservation of a viable network of wildlife habitats.

2.4 Partners could include water companies, in particular where they already have obligations in connection with reducing flooding from combined sewer overflows. They would also see value in such partnerships where sewage treatments assets are currently at capacity, and a reduction in surface water within the sewage system would delay the need for expensive infrastructure upgrades. It is therefore more cost-effective to plan and design multifunctional infrastructure that works with natural systems, capable of being utilised all year round such as restoring watercourses and flood plains within existing green infrastructure, for instance, by adapting public realm, urban parks, golf courses or agricultural land.

3. Managing water flows: How effectively do Defra and the Environment Agency's policies encourage innovative approaches to managing risk such as slowing the flow of water in urban and rural river catchment areas and promoting water storage?

3.1 National approaches tend to focus on reacting to events and reducing the impact of their repetition, rather than enabling the necessary coordination of land use and economic development planning with environmental planning, especially with regards green infrastructure[4], river corridors and floodplains. Better planning and design of sustainable drainage systems (SuDS) is critical. The experience of our own members is that environmental planning, including water management, cannot be dealt within in isolation from development planning and land use. One obstacle at present is the lack of weight given in decision-making to flood risk, especially in development consenting processes.

[4] Landscape Institute (2013) *Green infrastructure: an integrated approach to land use*. Landscape Institute. London

3.2 All too often flood risk management is dealt with as a problem that can only be resolved through utilitarian solutions related to the control of water using expensive engineering infrastructure such as traditional drainage systems and flood walls. Our view is that there is that there is an urgent need to integrate measures to reduce flood risk in other, more innovative ways, especially through effective restoration of floodplains and river systems, and by designing multifunctional interventions that work with natural systems, as applied through SuDS and green infrastructure.

3.3 Achieving this multifunctional and coordinated approach to land use requires a much better balance of the professional skills related to land use, green infrastructure, landscape planning and landscape design as well as traditional water management skills such as water engineering. In our experience, a different approach to flood risk would ultimately be more efficient in regard to the costs of related asset management but a present investment tends to be very institutionalised and directed towards seeking to provide a quick-fix solution that cannot do much more than alleviate 'medium' risk events. If a catastrophic event occurs then the fundamental characteristics and suitability of the location will tend to be the overriding factors. Sound landscape planning processes would enable these fundamental aspects to be more fully considered.

3.4 Rural land management practices have demonstrated their ability to manage flood risk for specific sites and / or within small catchments. It is understood that the effect of any such individual efforts in larger catchments rapidly becomes insignificant. However, if the update of farm-based flood-sensitive farming practices and small-scale flood storage and alleviation schemes on individual farms was significantly increased, then this collective effort has the potential to make a real difference to flood risk, even within larger catchments. Use of natural land management processes to achieve this outcome can be highly cost effective. However, there is also the potential to upscale the measures, not just increase their number. Catchment based partnerships (under the Environment Agency Catchment Based Approach initiative) have generally been small scale, but more ambitious measures are possible when and if the landowners are willing, and funding is available.

3.5 The role of upland management in controlling the flow of water downstream in key locations should not be underestimated. These areas are not densely populated and tend to receive high levels of rainfall. Slowing and controlling the release of water will help reduce problems at source. Examples of where positive results have already been achieved are in both Wales and Yorkshire where peat bogs have been allowed to re-establish through the stopping-up of drainage ditches, thereby preventing downstream flooding, improving the colour of the water extracted for drinking, providing a substantial carbon sink, and re-establishing peatland habitat. It should be noted that these cheap and effective measures have provided substantial financial benefits for water companies who have funded these works.

3.6 Management that exacerbates flooding includes over-stocking, conversion of grassland to arable crops, plough lines that encourage runoff, removal of hedgerows, copses or trees, loss of soil, and soil compaction. At the same time, too many aquifers and watercourses are being polluted through the migration of applied chemicals including nitrates. A new contract with the farming

industry is needed to both manage water and to secure water quality and water supply through public intervention systems.

3.7 Recommendations could include encouragement through the periodic review of the Common Agricultural Policy (CAP) to balance regulation with incentives, to secure the sustainable management of land and water through Pillar I. There is also scope for the promotion of better land management practices and environmental stewardship through funding within Pillar 2 of the CAP.

3.8 We are aware of current work being undertaken by Defra to develop two long-term strategies; the Food and Farming Plan[5] and the Environment Plan.[6] It is imperative that Defra considers how both will impact on flood prevention. It is encouraging that the department's shorter-term plan, set out in its recent publication *Creating a great place for living: Defra's strategy to 2020*, makes a commitment to ensuring that the nation is better protected against future floods however it remains to be seen what new delivery mechanisms will achieve this objective; it is clear from recent events that new measures are required.

4. Planning for floods: How well do planning policies ensure new buildings are not put in areas of high flood risk nor where they would increase risk to others – and how well do new developments incorporate sustainable drainage and flood-resilient buildings?

4.1 One of our primary concerns relates to sustainable drainage systems (SuDS). SuDS are an important part of our multifunctional green infrastructure, reducing surface water flood risk at the same time as delivering a range of other benefits, such as improved air and water quality, biodiversity, and counteracting the urban heat island effect. Through the creation of ponds, wetlands, swales and basins, which mimic natural drainage by absorbing or attenuating water into permeable and vegetated surfaces, SuDS can better manage the water flows and avoid creating one large flood event in one place at one point in time. They represent a cost-effective and sustainable way to reduce flooding close to where water falls. Despite the growing evidence in their favour, the Government has consistently failed to better support implementation of SuDS.

4.2 The use of SuDS was enshrined in the Flood and Water Management Act (2010), but it is still not fully enacted. The missing link is the enactment of Schedule 3 which would put in place National Standards, which provide a benchmark against which any proposed drainage scheme – falling within the scope of the Act – would be assessed, and enabling new SuDS Approving Bodies (SABs) to formally be put in place. Schedule 3, as originally proposed, would have required developers to include SuDS as part of **any** new development, and removed the automatic right of connection to a sewer (which provides an incentive for them to include SuDS).

4.3 In 2014 the Department for Communities and Local Government (DCLG) and Defra conducted a consultation on delivering SuDS. The departments' own analysis[7] of the consultation responses

[5] https://www.gov.uk/government/news/industry-kick-starts-work-on-great-british-food-and-farming-plan
[6] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/462472/ncc-natural-capital-gov-response-2015.pdf
[7] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/388941/suds-consult-sum-resp-201412.pdf

received found that the majority of respondents were not in favour of an exemption for minor size developments, highlighting concerns over the cumulative, detrimental impact on flood risk and the fact that this would undermine the Pitt Review[8]. Despite this the Government decided in favour of proceeding with its original intentions, stating that:

"On balance, and given the existing requirement on sustainable drainage systems in planning policy, the Government is minded to proceed as set out in the consultation document [residential developments of 10+ units; equivalent non-residential and/or mixed developments] and apply changes in planning policy to major development only. The Government would keep the effectiveness of this approach under review, and consider making detailed adjustments where necessary."

4.4 In December 2014, in a statement[9] to parliament, Sir Eric Pickles reiterated this decision, stating that *"…to protect the public, whist avoiding excessive burdens on business, this policy will apply to all developments of 10 homes or more and to major commercial development."* This statement ignores the fact that repeated, and increasingly severe, flood events also represent a burden on business, as we have detailed in the introduction to this evidence. The accompanying written ministerial statement[10] adds further to the problem by implying support for SuDS *"…unless demonstrated to be inappropriate."* Government do not make clear the conditions which would render implementation of SuDS 'inappropriate', nor does the National Planning Practice Guidance chapter on SuDS[11], which simply provides a hyperlink to the same written ministerial statement.

4.5 It is appropriate here to highlight publicly-available correspondence from 2014 between Lord Krebbs[12], Chair of the Adaptation-Sub Committee (ASC), and Rt. Hon Liz Truss MP[13]. The letter from Lord Krebbs clearly emphasised the value of SuDS, a measure he described as *low-regret*, i.e. relatively low-cost and providing relatively large benefits under predicted future climates. Lord Krebbs highlighted in his letter that it was critical that small-scale development was not exempt from SuDS requirements.

4.6 In her response, the Secretary of State explained that *"The Government will keep the effectiveness of this approach under review, and consider making detailed adjustments where necessary".* It is immediately clear that in light of recent flood events Government needs to fulfil the commitment to review the effectiveness of this approach to assess the extent to which it has underestimated the cumulative impact of development below the current threshold.

4.7 The need to do so is even greater considering the renewed focus of the Government to drive up housebuilding on brownfield land, many of which are small sites. DCLG's recent consultation

[8] The Pitt Review: *Lessons learned from the 2007 floods* (published 2008).
[9] https://www.gov.uk/government/speeches/sustainable-drainage-systems
[10] http://www.parliament.uk/documents/commons-vote-office/December%202014/18%20December/6.%20DCLG-sustainable-drainage-systems.pdf
[11] http://planningguidance.communities.gov.uk/blog/guidance/flood-risk-and-coastal-change/reducing-the-causes-and-impacts-of-flooding/why-are-sustainable-drainage-systems-important/
[12] https://documents.theccc.org.uk/wp-content/uploads/2014/10/2014-10-24-Lord-Krebs-to-Elizabeth-Truss-SuDS4.pdf
[13] https://documents.theccc.org.uk/wp-content/uploads/2014/10/Letter-to-Lord-Krebs.pdf

document[14] on proposed changes to national planning policy stated that *"Small sites of less than 10 units play an important role in helping to meet local housing need, and the majority of these sites are on brownfield land. In the year to June 2015, planning permission was granted for 39,000 dwellings on small sites…"* Given that such sites, under current arrangements, would be exempt from the requirement to include SuDS it is highly likely that flood risk will be exacerbated.

4.8 Arguments in support of SuDS have been supported by the recent report from the House of Lords Select Committee inquiry into National Policy for the Built Environment[15]. The report highlights that *"the provision of SuDS was of key importance to future urban water management".* It included two related recommendations, which we fully endorse:

"We recommend that the Government takes a more proactive approach to the provision of Sustainable Drainage Systems. The Government should consider whether to introduce a separate approval regime, as was envisaged in the Flood and Water Management Act 2010, or whether to upgrade the status of Sustainable Drainage Systems to critical infrastructure." (Paragraph 199).

"Further efforts need to be made to increase flood resilience in the built environment. This would include taking steps to reduce the number of new properties built in areas of flood risk against Environment Agency advice. In addition, there should be a requirement for all new properties in flood risk areas to have flood resilience measures built in." (Paragraph 200).

4.9 It is clear that Government must offer its full support for SuDS in all new development and that it is now imperative that Schedule 3 of the Flood and Water Management Act (2010) is implemented in full. New development should also include the redevelopment of brownfield land, as many of these sites are substantial, and would otherwise fall within the original criteria of 'major development'. The requirement just for an agreed level of 'betterment' is both insufficient, and misses a significant opportunity to improve water management within the urban environment. It is clear from CIRIA's newly published SuDS manual[16] that 'difficult' sites, such as brownfield land and contaminated land, are equally capable of utilising SuDS, if designed appropriately, and many brownfield sites are not contaminated. Therefore the same standards must apply.

[14] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/488276/151207_Consultation_document.pdf
[15] House of Lords Select Committee on National Policy for the Built Environment (2016) *Building better places*. House of Lords.
[16] http://www.ciria.org/Resources/Free_publications/SuDS_manual_C753.aspx