Achieving sustainable remediation – a framework and guidance from the UK

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What is SuRF-UK?

- UK-based collaboration of industry, regulators, academics and consultants
- Established in 2007, following the lead of SuRF (US)
- Independent co-ordination by CL:AIREF
  (www.claire.co.uk/surfuk)
- Secretariat has been funded by HCA, Shell and National Grid
  with additional in-kind support from industry
- Aims
  - A framework for assessing sustainable remediation that is effective, practical, regulatory acceptance
  - Review of sustainability indicators
Sustainable Development

• Sustainable development
  • ‘Development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (Report of the World Commission on Environment and Development 1987, the Brundtland report)

• Sustainable remediation
  • Application of the principles of sustainable development to remediation
Sustainable Development

Positive benefits

Negative impacts

....a net benefit
Regulatory Drivers

• European Directives
  • Waste Framework Directive
    • Hierarchy to promote sustainable waste management
    • Escalating taxation on disposal
  • Water Framework Directive
    • Preferred solution (to achieve good status) ... best balance of social, economic and environmental costs
  • Draft Soil Protection Framework
    • Deciding on remediation actions, Member States to consider ... social, economic and environmental impacts, cost-effectiveness and technical feasibility of the actions envisaged
Regulatory Drivers

- UK legislation
  - Planning regime
    - Underpins sustainable development
    - Draft national Planning Policy Framework
  - Environment Act 1995 requires environment agencies
    - To contribute to the goal of achieving sustainable development/have regard to social and economic needs
    - To take account of likely costs and benefits in considering how or whether to exercise statutory powers
- Contaminated land regime
  - Test of reasonableness
SuRK-UK Outputs

- Sustainable remediation

‘the practice of demonstrating, in terms of environmental, economic and social indicators, that the benefit of undertaking remediation is greater than its impact and that the optimum remediation solution is selected through the use of a balanced decision-making process’
Key Principles

• Protection of human health and the environment
• Safe working practices (for workers & local communities)
• Consistent, clear and reproducible decision-making
• Record keeping and transparent reporting (including assumptions & uncertainties)
• Good governance and stakeholder involvement
• Sound science
Sustainability Management
SuRF-UK Framework

Is the wider plan/project design set?
- **Yes**
  - TASK: Use remediation design to influence sustainability of detailed plan/project objectives and design and establish a sustainable remediation strategy
  - MILESTONE: Plan/project design set

- **No**
  - TASK: Select most sustainable remedial option to deliver project objectives
  - MILESTONE: Complete remedial options appraisal
    - Remediation and verification

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Stage A - Plan/project design

Stage B - Remediation implementation
Thinking about sustainable remediation at the point of the remedy selection

- National / regional planning and policy
  - Favourable tax regime for brownfield redevelopment
    - Local planning and policy
      - Supports shopping development in a particular area
        - Redevelopment project
          - Suggests financial need for basement parking
            - Remediation work
              - Optimal means of bringing site to a condition suitable for development
So the sustainability of remediation is a function of preceding decisions as well as remedy selection.

"Sustainability"

Removal | Soil washing | Biological
---|---|---
Preceding | Remedy | Overall

Represents preceding decisions.
But what about if sustainable remediation thinking started before remedy selection?

Points where sustainable remediation is considered

Decision includes sustainability of parking choices

Decision considers sustainability of remediation after parking choices have been made

Remediation work

Optimal means of bringing site to a condition suitable for development

Suggests financial need for basement parking

Supports shopping development in a particular area

Favourable tax regime for brownfield redevelopment

National / regional planning and policy

Local planning and policy

Redevelopment project
An early influence can improve sustainability (and cost)

Represent basement parking decisions

Represents undercroft parking decision
Sustainability Assessment
Stages in a sustainability assessment

• Agreeing objectives
  – What decision is the sustainability assessment going to inform?
  – What is being compared and why

• Agreeing which stakeholders to engage with
  – Those who significantly affect, or are affected by, the decision
  – Reviewing objectives accordingly

• Determining boundaries (e.g. project scope: spatial, temporal, lifecycle)

• Agreeing what sustainability is (which indicators to apply)

• Agreeing how these indicators will be assessed (the method or tool) and an overall “picture” of sustainability derived

• Executing the comparison

• Interpreting findings and carrying out sensitivity analyses

www.claire.co.uk/surfuk
A Tiered Approach

Start

Review start criteria *

Choose tier

Qualitative
Semi-quantitative
Quantitative

Supports sustainable decision making

Yes

Record assessment outcome and action(s)

No

*Criteria to review:
- Objectives
- Stakeholders
- Boundaries
- Indicators
- Options
- Techniques
- Sensitivity Analysis
- Any other pertinent issues
## Indicator Sets

<table>
<thead>
<tr>
<th>Environment</th>
<th>Social</th>
<th>Economic</th>
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<tbody>
<tr>
<td>Emissions to Air</td>
<td>Human health &amp; safety</td>
<td>Direct economic costs &amp; benefits</td>
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<tr>
<td>Soil and ground conditions</td>
<td>Ethics &amp; equity</td>
<td>Indirect economic costs &amp; benefits</td>
</tr>
<tr>
<td>Groundwater &amp; surface water</td>
<td>Neighbourhoods &amp; locality</td>
<td>Employment &amp; employment capital</td>
</tr>
<tr>
<td>Ecology</td>
<td>Communities &amp; community involvement</td>
<td>Induced economic costs &amp; benefits</td>
</tr>
<tr>
<td>Natural resources &amp; waste</td>
<td>Uncertainty &amp; evidence</td>
<td>Project lifespan &amp; flexibility</td>
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Resources

- Framework document
- Review of Indicators report
- Annex 1 SuRF-UK indicator set
- Frequently Asked Questions
- Case Study template
- Workshop presentations
- Webinars/podcasts

- www.claire.co.uk/surfuk
Lessons Learned

• Definitions objectives, scope and meanings must be clear to all parties – a common understanding
• Boundaries – what is the system, how deep do we go?
• Need for clear descriptions of “indicators”
• Potential for “double-counting”
• Start simple, assessment should be proportionate to project scale and sensitivity
• Transparency and clarity in reporting
• The objective is to achieve a **balanced** decision
• This is a stakeholder led process
• Subjectivity vs objectivity
SuRF-UK Current work

1. Develop and publish case studies
2. Develop guidance on generic ‘best management practices’
3. Develop guidance for assessors on good practice for Tier 1 (qualitative) sustainability appraisals
4. Webinar
Summary – SuRF-UK

- A framework for assessing the sustainability of remediation is available in the UK
- Supported by all UK environmental regulators
- Development and road testing assisted by focussed workshops
- Indicators sets developed and defined
  - But need to be populated (metrics)
- Supports balanced decision-making
Internationally

• Many international networks and initiatives on sustainable remediation: Europe, Americas, Australia, China, ISO?
  – E.g. see [www.cluin.org/issues/default.focus/sec/Global_Efforts_to_Advance_Remediation_at_Contaminated_Sites/cat/Overview/#2](http://www.cluin.org/issues/default.focus/sec/Global_Efforts_to_Advance_Remediation_at_Contaminated_Sites/cat/Overview/#2)

• Two key EU FP7 projects:
  – Greenland – “gentle remediation” - [www.greenland-project.eu](http://www.greenland-project.eu)
  – HOMBRE – sustainable regeneration of brownfields, [www.zerobrownfields.eu](http://www.zerobrownfields.eu)
SuRF-UK – China?

- ISSAS initiative already inked to international platform for “SuRFs”
- SuRF-UK happy to “share”, has done so already with SURF, SuRF-Australia, NICOLE etc
- SuRF-UK interested to collaborate on case studies
- SuRF-UK interested in technical exchanges
- Joint working / secondments – can we find funding?
SuRF-UK Steering Group

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• Nicola Harries, CL:AIRE
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