

*QUALREM Project*  
Quality -  
The first or last word

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BRE

Quality in Land Remediation  
QUALREM

- One of the 'original' project ideas
- Quality – what does this mean?
- Solve an existing problem, or creating one!
- Technical, environmental, social or economic issues – benefit of the SUBRIM consortium regarding
- How to make a difference?

## Quality – aims and objectives

- Aims
  - To improve the remediation of brownfield land; and so provide greater confidence for those procuring remediation
- Objectives:
  - To review current approach to quality, undertake site studies and determine protocols
  - To produce appropriate guidance

## Quality - background

- Technology – sub standard, inappropriate choices
- Information analysis – insufficient information, poor interpretation
- Quality – poor specification, workmanship and communication

## Definitions

- **Dictionary**
- Quality - degree of excellence, relative nature; general excellence
- Quantity – property of things regarded as being measurable, size or extension or weight or amount or number, specified or considerable amount

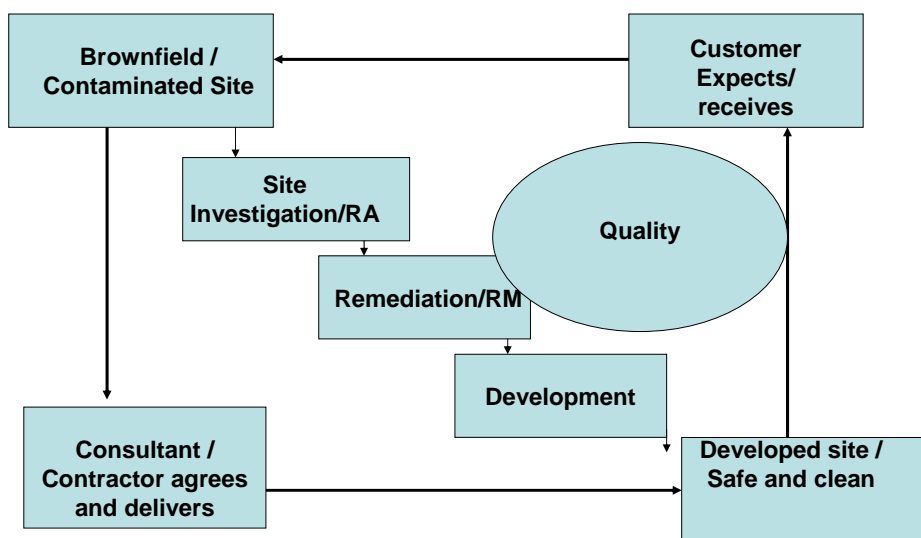
## Quality standards

- **ISO9000/9001**
- Quality – degree to which a set of inherent characteristics fulfils requirements
- *Characteristic – distinguishing feature*
- *Requirement – need or expectation that is stated, generally implied or obligatory*
- *Quality management – co-ordinated activities to direct and control an organisation, with regard to quality*
- *QMS – management system to direct...*

## Quality terms

- Organisational
- Quality Policy
- Quality Management (System)
- Job Specific
- Quality Objective
- Quality Planning
- Quality Control
- Quality Assurance
- Quality Improvement

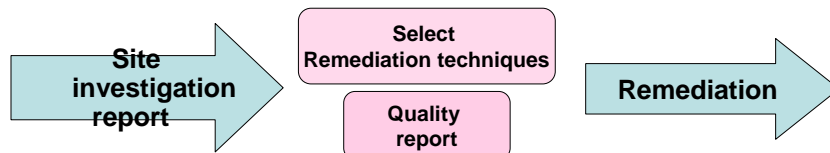
## Quality in Land Remediation



## Brownfield and quality

- Advantages for the use of brownfield sites
  - best use of existing services (transport and infrastructure)
  - creating sustainable communities
- The legal definition of “contaminated land”

Appropriate remediation is critical  
for prevention, minimization, or mitigation of damage to receptors



## Quality

The quality of a land remediation project may be enhanced by:

- quality management systems
  - for the organisation involved to a common standard
  - for the stages and components of a land remediation project
- updated sources of information and guidance and use of technology (understood)

VIA

- proper communication routes
- proper understanding of information and expected outcomes



## Quality Indicators: aims

- Address developers concerns and provide confidence
- Improve land remediation
- Holistic approach to quality through the entire remediation process
- Review site specific findings
- Specify methodology for development of quality protocols and guidance notes

## Quality Indicators: objectives

- Determine indicators of quality
- Develop measures for assessing quality in the remediation process
- Develop Quality Indicators
- Develop quality protocols
- Produce guidance

## Quality Indicators: methodology

- Desk study of site specific reports
- Identification of requirements
- Identification of actions
- Verification against current guidance notes
- Feedback from steering group
- Feedback from questionnaire survey

## Sites studied

- Use SUBR:IM portfolio in Greater Manchester and Thames Gateway
- Cover:
  - Site Investigation
  - Remediation
  - *Development*

## Site studies: purpose

- To provide a platform for the development of quality indicators
- To use live projects to set out key measures of performance
- To learn by abstracting information from real projects

but

- Not to consider retrospectively the performance of the project
- Not to criticise

## What site studies told us

- Relevant actions where quality is important
- Variances in emphasis to actions
- Relevant indicators of quality
  
- Need to develop simple but holistic guidance notes which prioritise issues
- Need to listen to stakeholders concerns

## Questionnaire survey: aims and objectives

- To understand how quality issues are being addressed by professionals and practitioners
- To appreciate constraints to quality in brownfield remediation
- To better understand how QUALREM can best assist professionals and practitioners

## Questionnaire survey: results 1

### Important potential advantages of quality in brownfield work

- 75% Problem solving at an early stage
- 65% Understanding constraints
- 65% Striking a balance between cost and risk
- 50% Improving the planning process and the work programme

## Questionnaire survey: results 2

### Constraints to the applying quality

- 70% Clients lack of appreciation of the process
- 55% Lack of appropriate standard and guidance
- 50% Regulatory, financial and timescale constraints
- 35% Lack of expertise by consultants or contractors

## Questionnaire survey: results 3

### Essential ways to improve quality

- 80% Expertise of staff involved
- 60% Communication between project team and between all stakeholders
- 55% Appropriate guidance by regulators and from third parties
- 50% Appropriate design and specification of works

BUT

- 70% Already use a quality management system

## Questionnaire survey: results 4

### How QUALREM can assist

- 70% Production of authoritative technical guidance documents
- 65% Development of quality indicators and protocols
- 65% Input to UK policy on brownfield regeneration
- 50% by bringing together existing guidance

## Example of a QI: historic desk study- 1

### Study of past site uses

- Investigate of all previous developments
- Understand potential legacies of past developments
- Understand site in the context of its surroundings and the wider environment
- Consultation and communication with regulators

## Example of a QI: historic desk study- 2

- Reconnaissance and walk over
- Visual, olfactory and photographic survey
- Record of structures and obstructions
- Awareness of potential buried services
- Topographical survey
- Safety plan
- Non-technical information
- Interaction with past and present stakeholders

## Example of a QI: historic desk study 1

### Quality objectives

- Detailed knowledge of present and past site uses
- Understanding of the nature of any contamination and hazards
- Assessment of potential pollutant pathways and the hydrological regime
- Identification of areas of immediate concern
- Provision of data to inform the investigation process
- Initial assessment of likely remedial needs

## Example of a QI: historic desk study 2

### Rules and procedures

- Adapt a holistic approach when interpreting historical data
- Record all data, observations and locations clearly and accurately
- Develop hypotheses regarding the presence, the nature and the distribution of potential contamination
- Inform the development of the conceptual model and the investigation and remediation strategies

### QIs

- Set out in three stages:
  - Site Investigation – Risk Assessment
  - Remediation – Risk Management
  - Development – Risk Management

## QIs - approach

- Set the requirement and description
- Provide 'guidance' essential elements
- Key references
- Expected outcome and outputs
- Measurement, monitoring and assessment

## Site investigation

- Strategy
- Site Investigation
  - Desk study
  - Site characteristics
- Conceptual model
- Intrusive and extrusive investigation
- Risk assessment

## Remediation

- Remediation strategy
- Remediation process
- Demolition activities
- Reporting
- Auditing

## Quality Protocols

- Protocol are written agreements, part of a contract
- Sets out the rules
- Creates a framework for actions and QIs
- Allows selection of actions and QIs
- Allows understanding between all parties

## Development of QPs: methodology

- Contract input
- Method of using quality actions and indicators in live contracts
- Explanation of basic actions to achieve added value through quality
- Identification of opportunities and constraints to achieving quality
- Verification against regulations and current guidance
- Identification of quality issues surrounding current guidance
- Methods of measuring, monitoring and feedback

## Project Workshop: 15 March 2006

- Held to consult with a wide range of stakeholders
- Clients, consultants, contractors, regulators, etc...
- To gain from 'real' experience
- To discuss QIs/QPs and gain input to the process

## Project workshop: outcome

- General acceptance that QIs/QPs were required
- Not new guidance, but QIs/QPs a tool to use
- Need to be measured, monitored and assessed
- Consider through the life of the project
- Initial costs may be higher but lower risk overall
- Focus on technical issues, but take account of social and economic

## Conclusions

- QIs/QPs – could make a valuable contribution to improving quality in land remediation with attendant benefits
- QPs will set a framework to use QIs
- Need to measure, monitor and feedback
- QIs/QPs – are a tool – not further new guidance
- QIs/QPs – make use of existing good practice
- Further development required
- 2<sup>nd</sup> Project workshop – October 2006
- Final draft – December 2006