

r3 environmental technology projects

Title		
Promoting Sino-UK collaboration on developing low carbon and sustainable methodologies for Brownfields and marginal land re-use in China		
Activities		
Information Review; Policy Review; Technical Authorship		
Description		
Contribution to a report on "To evaluate and adapt innovative set of methodologies for integrating sustainable remediation with urban planning and public realm design that will support the development of low input strategies for land management, sustainable remediation and community enterprise for brownfields and marginal land areas with a focus on renewable energy and carbon sequestration potential in China" being led by the University of Cranfield		
Start year	End year	Web link (if available):
2016	2017	

Title		
Taking Nanotechnological Remediation Processes from Lab Scale to End User Applications for the Restoration of a Clean Environment		
Activities		
Information Dissemination; Information Review; Market Consultancy ; Meeting and Conference Organisation; Policy Review; Research ; Web Site Development and Management		
Description		
<p>r3 environmental technology ltd is part of a consortium of 28 organisations from across Europe who have won a 14 million EURO research project to investigate how nanoscale particles can be used to treat environmental pollution in the subsurface (soil and groundwater). NANOREM will harness nanoremediation for restoring contaminated land and aquifer resources. The world leading technologies it is developing will benefit of a wide range of users in the EU environmental sector, including environmental consultants and contractors; site owners and managers; and regulators. The main aims of the project are:</p> <ol style="list-style-type: none"> 1. Identification of the most appropriate nanoremediation technological approaches to achieve a step change in practical remediation performance, 2. Development of lower cost production techniques and production at commercial scales, 3. Determination of the mobility and migration potential of nanoparticles in the subsurface, and relating these both to their potential usefulness and also their potential to cause harm, 4. Development of a comprehensive set of tools to monitor practical nanoremediation performance and determine the fate of nanoparticles, 5. Dialogue with key stakeholder and interest groups to ensure that the work meets real needs and agree its most sustainable and appropriate uses, balancing benefits against risks, 6. Carrying out a series of full scale applications in several European countries to provide realistic cost, performance, fate and transport findings. 		
Start year	End year	Web link (if available):
2013	2017	
www.nanorem.eu		

Title		
Strategies for rehabilitating mercury-contaminated mining lands in Colombia		
Activities		
Feasibility Studies; Information Dissemination; Market Consultancy ; Network Management; Policy Review; Research ; Technical Advice / Consultancy		
Description		
This project will deliver change by providing a range of science based strategies to rehabilitate land affected by soil mercury pollution in disadvantaged areas in Colombia and bring it back into productive use focusing on renewable energy opportunities and/or other services as most appropriate; supporting the FCO goals of increasing regional stability, facilitating sustainable economic growth, harnessing innovation in particular for low carbon development, supporting OECD accession, and identifying possibilities for new community enterprise.		
Start year	End year	Web link (if available):
2016	2017	

Title		
Contaminated and brownfield land management policies in China		
Activities		
Information Review; Policy Review; Technical Authorship		
Description		
Contribution to a report on "Developing urban contaminated and brownfield land management policies in China: learning from and adapting the UK experience" being drafted for the Foreign and Commonwealth Office under subcontract to CL:AIRE for a project being led by the Universities of Lancaster and Cranfield		
Start year	End year	Web link (if available):
2015	2016	

Title		
Balance people, planet, profit and process in a holistic approach towards brownfield regeneration		
Activities		
Information Review; Policy Review; Research ; Technical Advice / Consultancy		
Description		
This project is centred in Sweden, the Netherlands and Flanders. The overall aim of the proposed project is to deliver a holistic approach that supports sustainable urban renewal through the redevelopment of contaminated land and underused sites (brownfields). In order to reach the overall aim, the specific project objectives are aimed at the different parts of the holistic approach: * application and assessment of methods for design of urban renewal/land redevelopment strategies for brownfields that embrace the case-specific opportunities and challenges; * development of a method for sustainability assessment of alternative land redevelopment strategies to evaluate and compare the ecological, economic and social impacts of land use change and remedial technologies; * development of a practice for redevelopment of contaminated land in rules and regulations to enable implementations.		
Start year	End year	Web link (if available):
2013	2015	
www.snowmannetwork.com/main.asp?id=255		

Title		
Octopus Investments Advice		
Activities		
Market Consultancy ; Technical Advice / Consultancy; Think Tank		
Description		
Provision of technical advice to Octopus as regards AD and other opportunities. I.e. technical advice for specific anaerobic digestion projects and proposals where Octopus has invested on an on-call basis		
Start year	End year	Web link (if available):
2013	2015	http://www.octopusinvestments.com/company-seeking-finance/r

Title		
SuRF-UK Preparation of Status Paper		
Activities		
Technical Authorship		
Description		
Preparation of a technical status paper about current outputs on sustainable remediation from SuRF-UK (www.claire.co.uk/surfuk)		
Start year	End year	Web link (if available):
2015	2015	http://www.claire.co.uk/surfuk

Title		
NICOLE Lisbon Meeting Report		
Activities		
Information Review; Technical Authorship		
Description		
Start year	End year	Web link (if available):
2013	2014	

Title		
Octopus Investments Renewables Advisory Board		
Activities		
Market Consultancy ; Technical Advice / Consultancy; Think Tank		
Description		
Paul Bardos is a member of the Renewables Advisory Board which provides Octopus Investments with impartial advice and support on renewable energy investment strategy (see http://www.octopusinvestments.com/company-seeking-finance/renewable-energy/).		
Start year	End year	Web link (if available):
2013	2014	http://www.octopusinvestments.com/company-seeking-finance/r

Title		
HOlistic Management of Brownfield REgeneration (HOMBRE)		
Activities		
Database Development; Feasibility Studies; Information Dissemination; Information Review; Research ; Web Site Development and Management		
Description		
<p>This project is being carried out under the Seventh Framework Programme by a consortium of 14 organisations including r3. The projects' vision is to develop a HOlistic Management of Brownfield REgeneration (HOMBRE) to accomplish 'Zero Brownfield' development. The BF Navigator is developed to guide in the process, where better understanding of the urban life cycle will aid in early recognition and prevention of upcoming BF's, and better implementation of 'hard' technologies and more creative solutions based on 'soft' technologies will facilitate cost-effective, timely, and sustainable BF regeneration. BF innovative Technology Trains will optimally combine existing hard technologies, not just from the in situ or ex situ remediation technology point of view, but in combination with subsurface heterogeneity, energy efficiency, aquifer thermal energy storage, waste and process water management, and re-use of construction and bulk materials. Where economic drive for 'hard' solutions is weak or technologies still need to be developed, alternative or interim 'soft' re-use of BF's is explored. Such measures are focussed on a sustainable environment, and create societal assets from the services offered by the regenerated BF's. The BF Navigator will explore different scenarios, taking into account land use, biodiversity, historical, cultural and social context. The BF Navigator and 'hard and soft' technologies are developed and tested in co-operation with stakeholders, in case studies in three main areas: urban, industrial and mining, to ensure social, economical and environmental cohesion and sustainability of the results of the HOMBRE project. R3 supports work packages developing sustainability indicators, soft regeneration techniques and provides the project web site.</p>		
Start year	End year	Web link (if available):
2010	2014	www.zerobrownfields.eu

Title		
Development and application of soil and water remediation products derived from agricultural crop residues; LINK LK0847		
Activities		
Information Review; Market Consultancy ; Research ; Technical Advice / Consultancy		
Description		
<p>Up until now the value of pyrolysis of organic source materials has been (1) as a means to produce energy and more recently (2) as a tool to sequester carbon through amendment into soil as ‘biochar’. The latter becomes an attractive proposition if the value (economic and environmental) of charcoal as a soil amendment exceeds its value as a renewable fuel source.</p> <p>Forest Research and the University of Surrey have recently developed a patented technology based on the ability of charred agricultural and forestry residues to sequester large quantities of heavy metals (up to 200,000 – 300,000 mg metal kg-1 charcoal).</p> <p>Demonstration of the efficacy of the technology to remediate contaminated land would result in a large market demand for agricultural crop residues that can be converted into valuable remediation products, thus adding value to those industries involved in the supply of charcoal for land remediation. Farmers could benefit as suppliers of agricultural source materials.</p> <p>The project therefore aims to:</p> <ul style="list-style-type: none"> •Create new markets in land remediation for products derived from charred agricultural residues by demonstrating the efficacy and sustainability of adding charcoal to soil to sequester bio-available heavy metals. <p>To do this successfully a consortium of industrial and academic partners have been created to:</p> <ol style="list-style-type: none"> 1)Assess performance of charcoals (Lead partner - FR). 2) Develop products for field applications (Lead partner - FR). 3) Demonstrate product efficacy for soil remediation at the field scale (Lead Partner – DEC) 4) Assess the effectiveness of different incorporation techniques (Lead partner - DEC) 5) Describe the operating windows for the technology (Lead partner - FR) 6) Assess environmental impacts of the technology (Lead partner - R3 Environmental) 7) Develop the supply chain and business model for the technology (Lead partner - C-Cure Solutions). 		
Start year	End year	Web link (if available):
2011	2014	

Title		
Sustainable Remediation Forum UK Phases 2 and 3		
Activities		
Information Review; Think Tank		
Description		
<p>SuRF-UK was established in 2007, under the co-ordination of CL:AIRE, to ‘develop a framework to embed balanced decision-making in the selection of a remediation strategy to address land contamination, as an integral part of sustainable development’. It has since provided a framework for the use of sustainable remediation, and has been developing indicators and guidance to support this, along with the collation of sustainable remediation case studies and training materials. R3 has provided technical support for framework and methodology development for this initiative and been a member of the SuRF-UK Steering Group.</p>		
Start year	End year	Web link (if available):
2010	2013	www.claire.co.uk/surfuk

Title		
WRAP Framework: Technical Advisors		
Activities		
Market Consultancy ; Technical Advice / Consultancy		
Description		
Framework contract for providing advice on the re-use and recycling of organics to WRAP. WRAP have appointed a number of advisors to provide technical support services to WRAP and to businesses with which WRAP is involved. Areas of support include but are not limited to: advising on a strategy, providing recommendations on a specific technology, advising on supply chain management; collating and manipulating data; disseminating best practice; and acting as part of a project steering group.		
Start year	End year	Web link (if available):
2008	2013	

Title		
Digestates from Anaerobic Digestion: A review of enhancement techniques, and novel digestate products		
Activities		
Information Review; Research ; Technical Advice / Consultancy		
Description		
The project collated for WRAP relevant experience of digestate enhancement and/or product development techniques which would have relevance in England, Scotland and Wales. For example, given the lack of suitable agricultural markets in close proximity to some commercial AD facilities, some operators are electing to de-water digestate and market only the solid digestate fraction. R3 acted as a subcontractor to Pell Frischmann who were the main contractor for WRAP.		
Start year	End year	Web link (if available):
2012	2012	

Title		
Market expectations and requirements for digestate - what are the options?		
Activities		
Information Review; Market Consultancy ; Research ; Technical Advice / Consultancy		
Description		
The Government's Anaerobic Digestion Strategy and Action Plan focused on removing the barriers to increasing the energy from waste produced from AD. This was based on the recognition that AD is the best technology currently available for treating source-segregated food waste in particular. One of the barriers identified in the Strategy was the need for markets for the quality digestate produced from such plants. The aim of this project is to research and publish current market expectations for digestate and CLO in order that producers of these materials have more definition of the quality requirements for the various existing and emerging markets for its use. The project is being carried out for WRAP, and r3 is being supported by Pell Frischmann, Tony Chapman and Ursula Kepp.		
Start year	End year	Web link (if available):
2012	2012	

Title		
Crop Based Systems for Sustainable Risk Based Land Management for Economically Marginal Degraded Areas - Rejuvenate Phase 2		
Activities		
Copy Writing; Feasibility Studies; Information Dissemination; Information Review; Research ; Technical Authorship		

Description		
<p>This project applies a decision support tool designed by the Snowman 1 project Rejuvenate to three practical applications at realistic scales. Based on this test-work, the aims of this project are to i) validate and optimise the decision making framework, ii) provide detailed case studies for the re-use of contaminated land for biofuel crop production– in particular for secondary biofuels, iii) extend the scope of the decision support tool applying and validating it in three new jurisdictions (Belgium, Netherlands and Romania). R3’s activities in this Phase 2 work are to: * Assist in handover of Phase 1 DST to new team * Peer review pilot study plans and SWOT analyses * Link work to European networks: NICOLE, Common Forum, SuRF’s * Peer review reports, guide, papers * Initiate a refereed journal submission based on Phase 1 * Support liaison with US EPA * Peer review web pages (to be hosted by SGI)</p>		

Start year	End year	Web link (if available):
2010	2012	http://projects.swedgeo.se/r2/

Title		
NICOLE Web Site, meeting reports and newsletter		
Activities		
Copy Writing; Database Development; Information Dissemination; Information Review; Policy Review; Technical Authorship ; Web Site Development and Management		

Description		
<p>NICOLE, the Network for Industrially Contaminated Land in Europe, is a concerted action of the EC Environment and Climate Research and Development Programme. r3 has been responsible for the network's newsletter, NICOLE News, which is available as hard copy and on-line. In 1997 NICOLE decided to establish its own web site, which has been developed and operated by r3. An initial web site operated from 1997 to 1999. This was fairly simple encompassing basic information about NICOLE, and information archive, announcements, back issues of NICOLE News and various forms, eg for membership. In 1999 a second phase of NICOLE began. Over 1999 the web site was comprehensively upgraded to reflect the developing role of NICOLE and new advances in software. New web applications have been developed by r3 in partnership with Cybersales Ltd to develop a more complex interactive site for the network. The web site continues to be maintained, developed and enhanced by r3 and Cybersales</p>		

Start year	End year	Web link (if available):
1997	2012	www.nicole.org

Title		
Annotated bibliography: Evidence for digestate use in different UK markets		
Activities		
Information Review; Market Consultancy ; Research ; Technical Advice / Consultancy		

Description		
<p>The aim of this project was to obtain and publish a bibliography of empirical evidence for the benefits of different types of digestate in different UK markets, directly addressing Action KUD 1.2 from the Anaerobic Digestion Strategy and Action Plan (Defra, 2011). This supports continued market development of digestates by identifying key resources that would provide information for use by practitioners, thereby giving producers and their consultant’s access to a significant volume of data to support their market development activities.</p>		

Start year	End year	Web link (if available):
2012	2012	

Title		
Evaluation of In Situ Remediation Tenders		
Activities		
Technical Advice / Consultancy		
Description		
Review of design and build tenders, question 7 on groundwater remediation		
Start year	End year	Web link (if available):
2011	2011	

Title		
CL:AIRE & EA Remediation Technologies Blended Learning Suite		
Activities		
Training and Training Materials		
Description		
This work was to convert CL:AIRE's Ex Situ Bioremediation training from the former Remediation Technologies Training Programme into a blended learning, web based delivery module.		
Start year	End year	Web link (if available):
2011	2011	

Title		
Guidance document on managing contaminated sediments		
Activities		
Research ; Technical Advice / Consultancy		
Description		
Description This project produced a report providing draft guidance for the first part of the draft guidance for the 'Decision Framework for Assessing Options for the Disposal and Treatment of Contaminated Dredged Material' commissioned in 2010/2011 together with the draft guidance for capping. A future research programme will revise this draft guidance after feedback from Defra and the MMO and complete the remaining guidance for the remaining sections of the Decision Framework. R3 was a subcontractor to CEFAS providing in particular support on "sustainable" sediment management.		
Start year	End year	Web link (if available):
2011	2011	

Title		
Optimisation of data collection for mna assessment at former gasworks sites - evaluation and development of guidance		
Activities		
Research		
Description		
r3 environmental technology ltd (r3) worked with Prof. Phil Morgan of Sirius Geotechnical & Environmental Ltd (Sirius) to review existing evidence collection methods for MNA relevant to gasworks sites and how they link to the "lines of evidence" model used by Environment Agency (and other) guidance for MNA monitoring and verification. The review provided an assessment of the methods, identified gaps in provision and identified whether a standard MNA assessment technique is a feasible proposition for former gasworks and similar sites		
Start year	End year	Web link (if available):
2010	2011	

Title		
A risk/benefit approach to the application of iron nanoparticles for the remediation of contaminated sites in the environment		
Activities		
Information Review; Policy Review; Research ; Technical Advice / Consultancy		
Description		
<p>C L:AIRE is supported in this research project by r3 Environmental Technology Ltd (UK), Land Quality Management Group (UK), Deltares (Netherlands) and Geosyntec (USA). The project team delivered a final report to Defra which was independent, non-aligned, cross sectoral and will be made publicly available. The project will undertake desk based research to investigate the application of zerovalent iron nanoparticles for use in the remediation of contaminated land and groundwater. The project will provide background information on the use of nano iron for remediation purposes, that will include consideration of its physico-chemical characteristics, the fate and behaviour of nano-iron in the environment, how it can be applied, what situations it may be used in, and how it works in treating contaminants in soil and groundwater. The project will also describe the potential risks, benefits, limitations and restrictions associated with nano-iron use for remediation of contaminated sites in the environment. Real case studies where zerovalent iron nanoparticles have been used will be provided by drawing on examples provided by practitioners Worldwide. This project provided time scale:</p> <p>* A comprehensive inventory of nano-iron risks and benefits for contaminated land and groundwater remediation, identifying where conclusions can be drawn, and where uncertainties remain, as a basis for policy making</p> <p>* A set of detailed case studies that illustrate the range of contamination problems currently addressed by nano iron, and classified as commercially available; demonstrated; in development and conceptual</p> <p>* A prioritised research agenda to address any uncertainties identified.</p>		
Start year	End year	Web link (if available):
2010	2011	

Title		
Technical Guidance to Support the Reporting and Verification of NGP Bioremediation Projects		
Activities		
Information Review; Research ; Technical Authorship		
Description		
<p>r3 environmental technology ltd (r3) will develop guidance for National Grid Property (NGP) to support:</p> <p>1. Professional practice in option appraisal and verification plan consistent with forthcoming Environment Agency guidance</p> <p>2. Consistent reporting of bioremediation projects to a template that allows performance to be easily ascertained</p> <p>3. Collection of information for the verification of bioremediation using the "lines of evidence" approach, and support robust means of evidence collection to support verification and maximise the value obtained from data collected which has not always been fully realised</p>		
Start year	End year	Web link (if available):
2011	2011	

Title		
EURODEMO+		
Activities		
Database Development; Web Site Development and Management		
Description		
<p>r3 is maintaining an open access on line database for remediation demonstration projects across Europe, for EURODEMO+ (www.eurodemo.info), for the Austrian Environmental Protection Agency secretariat for the scheme. This is linked to EUGRIS</p>		
Start year	End year	Web link (if available):
2009	2010	www.eurodemo.eugris.info

Title		
The potential financial benefits of applying source-segregated composts to agricultural land		
Activities		
Information Review; Research		
Description		
<p>Description This was a short review project carried out for WRAP. While the nutrient value of composts is well documented, the financial benefits associated with re-using the organic matter in source-segregated composts and the longer-term benefits that this might have on agricultural soils are less well documented. The purpose of this project was to undertake a literature review of the benefits associated with the use of source-segregated composts in agriculture (and field horticulture), and where possible, to identify financial impacts associated with those benefits. The focus of this research should relate primarily to those benefits associated with organic matter.</p>		
Start year	End year	Web link (if available):
2010	2010	

Title		
New Earth Solutions CLO Application Studies		
Activities		
Feasibility Studies; Market Consultancy ; Research ; Technical Advice / Consultancy		
Description		
Technical and research support for risk assessment of CLO use to land and development of advanced concepts and approaches for CLO improvement and utilisation		
Start year	End year	Web link (if available):
2009	2010	

Title		
National Grid Bioremediation Project Survey		
Activities		
Technical Advice / Consultancy; Training and Training Materials		
Description		
This project is an assessment of the full scale bioremediation projects carried out by National Grid and its fore-runners. Its aims are to identify lessons learned and provide a both a framework for determining when bioremediation is a feasible remedy for future site management, and for project reporting to facilitate the assessment of future bioremediation projects.		
Start year	End year	Web link (if available):
2008	2010	

Title		
International Processes for Identification and Remediation of Contaminated Land		
Activities		
Information Review; Policy Review; Research ; Technical Advice / Consultancy		
Description		
The aim of this project has been to provide a summary of the approaches taken by a range of specified countries to identify and remediate contaminated land and how the regimes work in practice, including funding sources.		
The specific countries will include the UK; USA; Canada; Republic of Ireland; France; Germany; Netherlands; Belgium; Spain; Italy; Poland; Czech Republic; Australia and Japan.		
Start year	End year	Web link (if available):
2010	2010	

Title		
CRC-CARE Value-based Land Remediation		
Activities		
Technical Advice / Consultancy		
Description		
Participation in the project advisory group for a sustainable remediation research project in Australia: “Value based land remediation (VBLR): improved decision-making for contaminated land”. The research was funded by the CRC for Contamination Assessment and Remediation of the Environment (CRC CARE) and undertaken by a multidisciplinary team from the University of Technology, Sydney (UTS). The VBLR project was a pilot study to develop and apply theory and methods to investigate the institutions which govern how actors operate and interact in a range of contaminated site remediation decision situations (Plant et al., 2010). The pilot focussed on Australia and the Pacific (Fiji).		
Start year	End year	Web link (if available):
2010	2010	

Title		
AQUATERRA: Integrated modelling of the river-sediment-soil-groundwater system: advanced tools for the management of catchment areas and river basins in the context of global change		
Activities		
Information Dissemination; Network Management; Policy Review; Research		
Description		
<p>AquaTerra was a 20 million EURO integrated research project in the sixth Framework Programme (with 13 million EUROS support from the EC) The project had more than 40 partners from 21 European countries, and lasted five years. AquaTerra sought to develop a comprehensive concept for integrated river basin management and a clear understanding of individual techniques and modelling approaches for collecting river basin management information. R3’s research tasks in conjunction with other partners within this large project were connected with:</p> <ul style="list-style-type: none"> * Linkage of stakeholder requirements with how river basin legislation is implemented. * Assessing possible incoherence and inconsistencies policy frameworks between at EU and national levels, and seeking to promote a consensus between stakeholders * Linking fundamental research information in a scalable way that supports a science input into pragmatic decision making at a river basin scale <p>River basin management is a large and complicated undertaking but Aquaterra has provided research findings which support its improvement in the future. With others, r3 has contributed to Aquaterra’s outputs by:</p> <ul style="list-style-type: none"> * Assessment of stakeholders’ demands at different decision making scales with regards to the management of river basins and the implementation of legislation. This assessment was based on the participation in different working groups and processes, complemented by bilateral interviews with key stakeholders, decisions makers and experts. * Assessment of future river basin frameworks (EU, national) and identification of potential issues of concern was carried out using guided discussions with a number of European focus group exercises. * On the basis of this assessment we identified detailed scientific and technical research questions for the Aquaterra project overall to follow, to ensure a strong linkage between fundamental research work and policy relevant research questions, and to help identify an agenda for further research work beyond the end of the Aquaterra project. * We also investigated the development of an integrated conceptual model for river basin management planning. This element of work carried a high research risk as it was dependent on research teams across Aquaterra being able to link system models operating at a range of scales (from the microscopic to the river catchment scale). Ultimately this was not possible. No doubt this will be the subject of further research proposals in the future either from within Aquaterra, by other research groups or both. However, we were able to provide an on-line visualisation of AQUATERRA research outputs (in conjunction with EUGRIS technology) to provide research outputs linked to different stakeholder information demands. For a full project description and outputs, see: http://www.eu-aquaterra.de/ 		
Start year	End year	Web link (if available):
2004	2009	http://www.attempto-projects.de/aquaterra/

Title		
CLAIRE Ex Situ Bioremediation Training Module		
Activities		
Training and Training Materials		
Description		
Assistance in the development and delivery of a CL:AIRE training module on ex situ bioremediation Jan 2010		
Start year	End year	Web link (if available):
2008	2009	www.claire.co.uk

Title		
RISKBASE / EUGRIS Interface for DECHEMA Gesellschaft für Chemische Technik und Biotechnologie e.V.		
Activities		
Database Development; Information Dissemination; Information Review; Web Site Development and Management		
Description		
<p>RISKBASE was an EC funded Framework 6 Programme project. The objective of RISKBASE was to review and synthesise the outcome of EC FP4-FP6 projects, and other major initiatives, related to integrated risk assessment- based management of the water/sediment/soil system at the river-basin scale. This synthesis was to support the development of integrated risk assessment-based management approaches enabling the prevention and/or reduction of the negative impacts caused by human activities on that system. R3 environmental technology ltd, r3 (with Cybersales Ltd) were commissioned to develop an interfacing approach that enables the existing RISKBASE web site to work with the EUGRIS system. This provided RISKBASE with (a) a large library of information already compiled from relevant FP4-6 projects, (b) a working and well trafficked information dissemination route which can be closely co-ordinated with the RISKBASE final report (c) a route for collating information from currently active projects (d) a means of developing functions for RISKBASE team members and (e) directory services for organisations and individuals.</p>		
Start year	End year	Web link (if available):
2007	2009	www.riskbase.eugris.info

Title		
Sednet Meeting Report 2009		
Activities		
Database Development; Information Dissemination; Information Review; Technical Authorship		
Description		
Sednet is a European network supporting sediment research decision making and policy. R3 monitored and supported report preparation for their roundtable meeting in Hamburg during September 2009 to provide a downloadable meeting report		
Start year	End year	Web link (if available):
2009	2009	www.sednet.org

Title		
MBT Compost Like Output Nitrogen Availability Trials		
Activities		
Research		
Description		
<p>the use of Compost-Like Outputs (CLO) on land make opportunities for field trials very limited, although some plot-scale trials have been undertaken. This trial was carried out for WCA Environment on behalf of the Environment Agency. Its aims were : * To compare the total N concentration in the CLO materials * To compare the effects of different CLO types on N uptake by plants * To assess the fate of N within CLO amended soils, ie., mineralisation, immobilization and leaching The final aim is an important step as N behaviour in the soil must be considered in the round; the uptake of N by plants is only one route by which N might move through the soil matrix and the extent to which N is taken up by plants will be affected by both leaching and the turnover of soil organic N.</p>		
Start year	End year	Web link (if available):
2008	2009	

Title		
Assessment of the impact of the Nitrates Directive and Water Framework Directive on the potential use of quality composts in agriculture		
Activities		
Information Review; Research		
Description		
<p>An investigation for WRAP that: * Reviewed the key requirements of the Nitrates and Water Framework Directives, with particular reference to target levels of nitrate and phosphate in soils and/or receiving waters * Reviewed the published literature examining the prospects for source-segregated composts to mitigate or contribute to nitrogen and phosphorus release from agricultural systems * Discussed the potential impact of the Nitrates and Water Framework Directives on the use of source-segregated green and green/food composts in agriculture</p>		
Start year	End year	Web link (if available):
2009	2009	

Title		
SURF-UK - Paper for remediation Journal		
Activities		
Information Review; Policy Review; Technical Authorship		
Description		
<p>r3 drafted the major output paper for the first phase of work by the Sustainable remediation Forum in the UK (SuRF-UK). The paper presented a framework for assessing "sustainable remediation"; described how it links with the relevant regulatory guidance; reviewed the factors considered in sustainability; and the appraisal tools that have been applied to evaluate the wider benefits and impacts of land remediation. The paper also describes how the framework relates to recent international developments including emerging European Union legislation and policy.</p>		
Start year	End year	Web link (if available):
2009	2009	www.claire.co.uk/surfuk

Title
Crop Based Systems for Sustainable Risk Based Land Management for Economically Marginal Degraded Areas (Rejuvenate Phase 1)
Activities
Information Review; Policy Review; Research

Description
The aims of this project have been to: 1) explore the feasibility of a range of possible approaches to combining risk based land management (RBLM) with non-food crop land-uses and organic matter re-use as appropriate, 2) identify a matrix of potential opportunities worthy of further development in the UK, Germany and Sweden and in a wider European context, and 3) assess how verification of their performance might be carried out and identifying what requirements remain for future research, development and demonstration. The project was led by r3, and includes partners and subcontractors from Germany (DECHEMA Gesellschaft fuer Chemische Technik und Biotechnologie e.V.); Sweden (Swedish Geotechnical Institute and FB Engineering); and the Netherlands (Bioclear). It is part of the EU Framework 6 Programme European Research Area project "Sustainable management of soil and groundwater under the pressure of soil pollution and soil contamination (SNOWMAN)". The UK funders were the Environment Agency and Defra. Rejuvenate has developed a decision support approach for determining optimum opportunities for combining RBLM with non-food production. This is now being rolled out to a three year demonstration scale research project in several European countries from 2010 to 2012

Start year	End year	Web link (if available):
2008	2009	

Title
Collation of Sustainability Indicator Sets for the UK Sustainable Remediation Forum
Activities
Research

Description
r3 developed an online list of sustainability assessment indicator sets that are available in the open literature, including (a) some indication of their strengths and weaknesses (b) a "map" of what segments of sustainability appraisal they might cover: e.g. environmental, social and economic and also subcategories of the three elements (c) any strong policy linkages (d) some brief description, e.g. whether they are linked to "targets". These were used to illustrate the types of indicators currently in use for sustainability appraisal in the final version of the SURF UK 2009 report. r3 also summarised sustainability appraisal techniques and will map indicator suggestions received by SURF during the November SURF-UK meeting.

Start year	End year	Web link (if available):
2009	2009	www.claire.co.uk/surfuk

Title
Organics Specialist Advisors to WRAP
Activities
Market Consultancy ; Technical Advice / Consultancy

Description
The aim of this work is to support the delivery of the Organics Team objectives through the provision of a range of high quality advisory services across its wide range of activities, which include: large scale capital investment in new or upgraded composting facilities; technical product trials; research and development exercises; product marketing; as well as trailblazer projects on brownfield sites. R3 is main contractor, with the University of Reading, Cybersales Ltd and Ecological Risk Assessment.

Start year	End year	Web link (if available):
2007	2008	

Title		
Market development of composts derived from different organic waste streams		
Activities		
Research ; Research Management ; Think Tank		
Description		
<p>The project, funded by Grantscape, investigated the potential uses of composts derived from mixed organic waste streams to facilitate their use in key soil and land-based applications. Its specific objectives are to evaluate the influence of non-PAS 100 compost with respect to: 1. soil water balance and hydrology. 2. plant establishment and development across a range of real-life scenarios. 3. changes in pH, redox and pH buffering in treated soil and extrapolating their impacts on contaminants, and habitat maintenance in acidic soils. 4. amelioration of contaminated soils or run-off either directly (e.g. via cation exchange) or indirectly via vegetation growth. 5. appraising the risks involved in utilising such materials in both publicly accessible and non-accessible land and its potential contribution to sustainable development. 6. estimate potential volumes / pricing to enable markets to develop, with special reference to: * Land remediation * Bio-fuels and other non-food crops * Habitat establishment * Forestry * Soil stabilisation and manufacture</p>		
Start year	End year	Web link (if available):
2005	2008	

Title		
Advanced Plasma Power Consultancy		
Activities		
Market Consultancy ; Technical Advice / Consultancy		
Description		
Consultancy support for municipal solid waste management technologies and use of MBT OM residues		
Start year	End year	Web link (if available):
2008	2008	

Title		
MOKKA: Innovative Decision Support Tools for Risk Based Environmental Management		
Activities		
Database Development; Web Site Development and Management		
Description		
<p>Mokka was a major Hungarian project developing risk assessment and risk management tools carried out with the Technical University of Budapest, Vituki Consult, TNO and other Hungarian partners. (http://mokka.agt.bme.hu/mokka/index.php?lang=eng&body=mokka). Part of the project included an on-line decision support tool and database. R3 supported the linkage of this system to EUGRIS</p>		
Start year	End year	Web link (if available):
2006	2008	www.magyar.eugris.info

Title		
New Earth Solutions Bioenergy Crop Trials - Phase 1		
Activities		
Research ; Technical Advice / Consultancy		
Description		
r3 provided technical and research support for trials being carried out by New Earth Solutions Ltd into the potential benefits of using compost produced from source segregated organics for supporting bio-energy crops (wheat and barley)		
Start year	End year	Web link (if available):
2007	2008	

Title		
Advice to Advanced Plasma Power Ltd		
Activities		
Market Consultancy ; Technical Advice / Consultancy		
Description		
Provision of ad hoc advice and preparation of a briefing paper on outlets for MBT organic matter, comparing this with the outlets of their gasification / plasma process		
Start year	End year	Web link (if available):
2008	2008	
http://www.advancedplasmapower.com/		

Title		
CIWM Workshops		
Activities		
Information Dissemination; Meeting and Conference Organisation		
Description		
A series of workshops were organised with CIWM - concluding in May 2008 with a workshop on: Towards Certainty in the Use of Organic MBT Outputs		
Start year	End year	Web link (if available):
2005	2008	

Title		
Forest Research Market Consultancy		
Activities		
Business Brokerage; Market Consultancy		
Description		
Support for development of business plan and market entry strategy for the use of modified charcoals in land remediation. This work was for a spin out company: C-Cure		
Start year	End year	Web link (if available):
2008	2008	

Title		
European platform for demonstration of efficient soil and groundwater remediation		
Activities		
Database Development; Web Site Development and Management		
Description		
EURODEMO was an EC funded FP6 Coordination Action for contaminated land management demonstration projects across the EU. Key elements of this initiative were to involve all relevant stakeholders from policy, research, service providers, industry, and existing networks to develop commonly accepted protocols to certify novel technologies and to evaluate their efficiency. The basis for this process will be existing cases from European demonstration sites. A common format for operating windows for remediation techniques will be generated by the project. Specific dissemination of structured information took place through the EUGRIS information platform and through specific workshops and training initiatives will ensure that sustainable land management in Europe is boosted. R3's role in this project was the development of systems for web linked databases to store the EURODEMO demonstration project and funding information, and link it to EUGRIS		
Start year	End year	Web link (if available):
2005	2007	www.eurodemo.info

Title		
Common Forum Information Bank		
Activities		
Database Development; Information Dissemination; Web Site Development and Management		
Description		
This project created a customised "information bank" linked to the Common Forum web site to allow Common Forum members to post links to key national documentation and projects (and also perhaps archive key reports). It also provided customised access for Common Forum members to the wider EUGRIS library. All postings were included in the wider EUGRIS system, for further dissemination.		
Start year	End year	Web link (if available):
2006	2006	www.commonforum.eugris.info

Title		
Technical Support Essex CC		
Activities		
Information Review; Technical Advice / Consultancy		
Description		
Essex CC (alongwith Cambridge CC) used r3 for technical support in drafting their response to the "The Source Segregation Requirement in Paragraph 7A of Schedule 3 to the Waste Management Licensing Regulations 1994: A Consultation Document".		
Start year	End year	Web link (if available):
2006	2006	

Title		
European Information Survey for Regensis		
Activities		
Business Brokerage; Market Consultancy ; Technical Advice / Consultancy		
Description		
r3 provided a report on selected European environmental and market information for remediation, covering: market sizes, economic parameters such as GDP and labour costs, e.xtent of contaminated land and brownfield problems in Europe, major environmental consultancies, policy and regulatory context		
Start year	End year	Web link (if available):
2006	2006	
www.regenesis.com		

Title
EUGRIS European Contaminated Land and Groundwater Information Service, a web based portal - FP5 Project and ongoing hosting
Activities
Copy Writing; Information Dissemination; Information Review; Policy Review; Technical Authorship ; Web Site Development and Management; Database Development

Description
<p>EUGRIS provides a "one stop shop" for information provided by research projects, legislation, standards, best practice and other technical guidance and policy/regulatory publications from the EC, participating States and from various international networks dealing with groundwater and land management issues. EUGRIS was originally a research project, funded by the European Commission and (for r3) by UK organisations until November 2005. Since November 2005 EUGRIS research and development has been funded individually by partners with no grant support. The original project team consisted of 11 partners including national ministries and authorities, research organisations, SMEs and Consultants from Denmark, France, Germany, Hungary, Italy and United Kingdom. By November 2005 EUGRIS had developed version 1 of an online portal for contaminated land and groundwater information, in particular to support the dissemination and use of research outputs. There are two dimensions to the EUGRIS research: firstly EUGRIS is a novel system (see below), secondly the information content of EUGRIS is of research information. A pan European soil and groundwater information system had not been attempted before. R3's input to the project was principally the system development and a contribution to the research information content.</p> <p>Outcome to November 2005: The research work led to a bespoke information management system design and starting content of information. An outline business plan was produced by the Hungarian partner for the consortium as a whole, but a lack of follow-on funding meant that the original business plan could not be implemented. A further complication was that the large range of international stakeholders (industry, regulators etc had differing aspirations and requirements of the system.</p> <p>Developments from December 2005: The consortium has since been dissolved and r3 has been developing the system on a self funded basis, although at a reduced level of effort. This led to the launch of a version 2 system by 2006/7 and a doubling of information content. R3 has been working closely since December 2005 with Cybersales Limited in a joint venture to develop EUGRIS further. We are pleased to say that EUGRIS has been identified by European business and regulator networks as worthy of onward development (published December 2009, link: http://www.commonforum.eu/publications_positionpapers.asp). This is potentially a major opportunity for us to take EUGRIS to a commercial service.</p>

Start year	End year	Web link (if available):
2003	2005	www.eugris.info

Title
Advice to ABB Engineering
Activities
Market Consultancy

Description		
Assisting ABB in finding partners for petrol station remediation in continental Europe		
Start year	End year	Web link (if available):
2005	2005	

Title
Collation of Existing Information on the Composting and Analysis of Feedstocks and Products of Mechanically Separated Fractions of Municipal Solid Waste
Activities
Database Development; Information Dissemination; Information Review; Research ; Technical Authorship ; Web Site Development and Management

Description
Composting combined with mechanical separation processes may provide a means of recovering lower grade composts and other recyclates both from the residual wastes, and from general waste collections, where for economic, social or other reasons composting of source segregated materials is not carried out. This combination of mechanical and biological treatments has come to be known as "MBT", and this technique is seeing an increasing number of applications across Europe. However, while "MBT" is "new", mixed waste composting is not, and a large amount of information has been collected about the performance of composting, sampling and separation systems for mixed waste composting. It appears that not all of this information is being exploited by MBT developers, who may therefore be at risk of repeating research that has already been done, or perhaps even repeating mistakes from the past, or not carrying out adequate sampling and analysis. SITA Environmental Trust supported this project which collated the large body of existing, and apparently forgotten, information about composting mechanically separated fractions of MSW including sampling and sample preparation issues; and then to present this information in a form that is easily accessible to the UK waste management industry, environmental consultants and researchers.. This information has been critically reviewed and databased in an on-line web linked database (www.compostinfo.info) in a form that is easily accessible to the UK waste management industry, environmental consultants and researchers.

Start year	End year	Web link (if available):
2002	2005	www.compostinfo.info

Title
Common Forum, January 2004 UK meeting
Activities
Copy Writing; Information Dissemination; Information Review; Meeting and Conference Organisation; Policy Review; Technical Authorship

Description
The Common Forum is an invitation only meeting of European and EC regulators involved in contaminated land and groundwater management. R3 supported the meeting (agenda) development, and produced its meeting report.

Start year	End year	Web link (if available):
2004	2004	www.commonforum.eu

Title		
Feasibility study for civic amenity waste recycling for Stockton on Tees Borough Council (2002)		
Activities		
Information Review; Research ; Technical Advice / Consultancy		
Description		
The Borough of Stockton on Tees wished to establish a landmark composting facility, linked to existing waste management and recycling facilities in the area and a local educational and visitor centre. In order to ensure a high quality proposal, a feasibility study was being carried out for SBC by r3 Environmental Technology Limited and AEA Technology PLC, with the following stages: 1.Review and audit of available data and information for strategy development 2.Options appraisal to identify and rank alternatives that might feature in a composting strategy for SBC and Middlesbrough BC		
Start year	End year	Web link (if available):
2002	2004	

Title		
Technical Support for the Markham Willows composting/SRC/land reclamation project 03/04		
Activities		
Database Development; Research ; Research Management ; Technical Advice / Consultancy; Web Site Development and Management		
Description		
r3 worked as part of a team for exSite Research Limited providing technical support for the Markham Willows Project. The aim of this project were to establish in detail the site-specific technical and financial information necessary to plan a combined organic matter recycling and woodland regeneration scheme for the reclamation of a former colliery in Derbyshire. r3's specific roles include support for proposal development by R&D performers, development of specifications for composts (or digestates) to be used on site, web site and information management software (data management system), assistance in preparing of proposals for EC funding.		
Start year	End year	Web link (if available):
2004	2004	

Title		
Book: Reclamation of Contaminated Land, Paul Nathanail and Paul Bardos, Wiley (London) 2004		
Activities		
Technical Authorship		
Description		
Land contamination is of global concern with many of the world's industries potentially harming the environment and human health. Along with rapidly changing policy and technological developments, this is an interdisciplinary area in which successful contaminated land management depends on the expertise of and interaction between a number of scientific and engineering disciplines. Reclamation of Contaminated Land takes into account the different groups involved in contaminated land management and offers a flexible learning approach based on practical experience and research. It presents an overview of the general skills and knowledge required, encompassing both general management and regulatory practice and specific land contamination issues. Divided into two parts, Part I discusses site characterisation and the design of site investigations, and the central role of conceptual models and risk assessment in decision-making. Part II discusses how risks from contaminated land are managed and the role of different remediation approaches to achieving this. Reclamation of Contaminated Land is suitable for 2nd, 3rd and 4th year undergraduates and MSc students in Environmental Science, Environmental Technology, Environmental Management, Geography, Geology, Estate and Land Management. It is also key reading for undergraduates and MSc students in Chemical Engineering, Civil & Environmental Engineering and Environmental Chemistry, as well as professional planners and developers, and local authorities.		
Start year	End year	Web link (if available):
1997	2004	http://www.wileyurope.com/WileyCDA/WileyTitle/productCd-

Title		
Detailed planning for the Markham Willows composting/SRC/land reclamation project		
Activities		
Information Review; Research ; Technical Advice / Consultancy		
Description		
r3 worked as part of a team for exSite Research Limited on the “Markham Willows Master-Planning Project”, supported by a number of Private and Public sector funders. The aim of this project has been to establish in detail the site-specific technical and financial information necessary to plan a combined organic matter recycling and woodland regeneration scheme for the reclamation of a former colliery in Derbyshire. r3’s specific roles included planning for green waste composting, contaminated land risk management approaches, R&D strategy development, planning and developing proof of concept studies.		
Start year	End year	Web link (if available):
2002	2003	

Title		
Technical support to a major insurer on a compost fire claim		
Activities		
Technical Advice / Consultancy		
Description		
Provided technical assistance to resolve a dispute over liability related to a fire suggested to have been caused by composting		
Start year	End year	Web link (if available):
2002	2003	

Title		
Oxygen Release Compound® and Hydrogen Release Compound®: Technologies for In Situ Remediation		
Activities		
Business Brokerage; Market Consultancy ; Technical Advice / Consultancy		
Description		
r3 supported the entry of Oxygen and Hydrogen Release compounds (ORC & HRC) into the UK market. ORC and HRC promote in situ bioremediation and are manufactured by Regenesis in California. Detailed technical information is available on their web site: http://www.regenesis.com . R3 represented Regenesis in the UK and Ireland, and provided the basis for widespread use of these technologies and recruitment of key personnel.		
Start year	End year	Web link (if available):
1998	2003	www.regenesis.com

Title		
Non-biological case studies for CIRIA		
Activities		
Information Review; Research		
Description		
R3 worked as a subcontractor to WSP Environmental on a CIRIA project reviewing case studies of the application of non biological techniques for the remediation and assessment of contaminated land, including land contaminated with radionuclides. This work will focus on UK case studies and will include a detailed review of existing information, and extensive consultancy with current technology providers. Order the report from www.ciria.org.uk		
Start year	End year	Web link (if available): http://www.eugris.info/displayresource.asp?Cat=document&Res
2001	2003	

Title		
Compost production advice for a local authority		
Activities		
Information Review; Technical Advice / Consultancy		
Description		
This project was carried out in collaboration with other leading experts in the field, and focused on reviewing existing technical reports about an operating composting and sorting plant, and suggesting means of improvement.		
Start year	End year	Web link (if available):
2001	2002	

Title		
Bioremediation case studies for CIRIA		
Activities		
Information Review; Research		
Description		
R3 worked as a subcontractor to WSP Environmental on a CIRIA project reviewing case studies of the application of biological processes to contaminated land remediation and risk assessment. This work focused on UK case studies and included detailed review of existing information, and extensive consultancy with current technology providers. Order the report from www.ciria.org.uk .		
This work won a trade award for transparency of technical report for CIRIA.		
Start year	End year	Web link (if available): http://www.eugris.info/displayresource.asp?ResourceID=5062&
2000	2002	

Title		
Advice on composting for Municipal Recycling Facilities in the UK and France for a UK company		
Activities		
Technical Advice / Consultancy		
Description		
Technical review of transferability of French MBT technology for a commercial operation in the UK		
Start year	End year	Web link (if available):
1997	2002	

Title		
Technical support for WRC PLC study on compost standards carried out for WRAP		
Activities		
Information Review; Research		
Description		
R3 worked as a subcontractor to WRC PLC on a WRAP project. The purpose of the research was to provide an analysis of the market potential for lower grade composted materials in the UK, taking into account the risks associated with their use in different applications. The research was also to assess the viability of introducing a standard/standards for such products. Download the report from www.wrap.org.uk		
Start year	End year	Web link (if available):
2002	2002	

Title		
Peer review of remedial options appraisal for a site in Israel for a major UK consultancy / contractor.		
Activities		
Technical Advice / Consultancy		
Description		
Provided an expert second opinion on remediation design work		
Start year	End year	Web link (if available):
2002	2002	

Title		
ExSite Marginal Land Restoration: Information Review and Scoping Study		
Activities		
Feasibility Studies; Information Review; Network Management; Research		
Description		
<p>exSite Research Limited commissioned r3 to carry out a scoping study on marginal land restoration in collaboration with Forest Research, the R&D arm of the Forestry Commission. The principal aims of this study reflect two of the key themes of exSite: securing the re-use of land and demonstrating the commercial potential of land re-use techniques for post industrial land, where there is no current economic driver for re-use (ie marginal land). This study examined the feasibility of setting up a demonstration project to combine</p> <ul style="list-style-type: none"> * Phyto-stabilisation (i.e. the long term potential for risk management of contaminated sites using plants to take up or otherwise stabilise potential pollutants), * Biomass production for energy, and * Stimulating the recycling of organic matter to land as an alternative to landfill disposal of wastes. <p>The final report was published by Land Quality Press in April 2001.</p>		
Start year	End year	Web link (if available):
1999	2001	

Title		
CLARINET: Contaminated Land Rehabilitation Network For Environmental Technologies		
Activities		
Information Dissemination; Information Review; Network Management; Policy Review; Research ; Technical Authorship ; Web Site Development and Management		
Description		
<p>CLARINET: Contaminated Land Rehabilitation Network For Environmental Technologies (completed 2002)</p> <p>CLARINET's primary aim is to develop technical recommendations for sound decision making on the rehabilitation of contaminated sites in Europe. CLARINET is a concerted action within the Environment & Climate Programme of the European Commission DG XII, co-ordinated by the Austrian Environment Agency. It integrates and combines the knowledge of academics, government experts, consultants, industrial landowners and technology developers from 16 European countries. The project started on July 1st 1998 and its final reports were issued in 2002. r3 provided part of the UK technical input to CLARINET focusing on decision support tools and risk management. It also generally supported the UK participation in the network. R3 input was largely funded by Defra and its fore-runners with some support from the EC for travel and subsistence.</p>		
Start year	End year	Web link (if available):
1999	2001	http://www.commonforum.eu/publications_clarinet.asp

Title		
Study of the Benefits and Participation in a Selection of Non-military NATO/CCMS Pilot Studies and Ad Hoc Projects		
Activities		
Information Review; Network Management; Policy Review; Think Tank		
Description		
<p>NATO's Committee on the Challenges of Modern Society (CCMS) decided in 1999 to carry out an evaluation of its non-military related work as part of an internal assessment of its role as an international organisation. In this respect, in February 2000 they awarded Professor Paul Bardos of r3 Environmental Technology Ltd a CCMS Fellow Fellowship (976833) to assess the benefit of a range of non-military Pilot and other studies to NATO and Partner countries. The study also reported on the range of topics and issues tackled by the Pilot Studies and their participation.</p>		
Start year	End year	Web link (if available):
2000	2001	http://www.nato.int/science/publication/bardos/bardos-intro.html

Title		
MTBE Issues Review		
Activities		
Information Review; Network Management; Research Management		
Description		
Development of approaches to consensus building between stakeholders in the European debate about MTBE issues for groundwater for two industry associations		
Start year	End year	Web link (if available):
2000	2001	

Title		
Burden Mitigation On Small And Medium Enterprises Or Small Sites In European Countries		
Activities		
Information Review; Policy Review; Technical Advice / Consultancy		
Description		
Assistance with a technical review of contaminated land impacts on sme's in Europe for a Japanese client		
Start year	End year	Web link (if available):
2001	2001	

Title		
Blue Circle Special Cements		
Activities		
Business Brokerage; Market Consultancy ; Research ; Technical Advice / Consultancy		
Description		
Technical support to Blue Circle (now Lafarge) Special Cements on stabilisation / solidification technology development		
Start year	End year	Web link (if available):
1999	2001	

Title		
Assistance With a Cost Model for an Integrated Approach to Biomass Production , Composting and Remediation		
Activities		
Feasibility Studies; Research ; Think Tank		
Description		
The exSite Marginal Land Restoration: Information Review and Scoping Study - outlined below - has led to the development of large scale project proposals, involving the following team: r3, exSite, Groundwork, AEA Technology, VHE Technology and Forest Research. As part of this proposal development an exiting biomass cost model produced by AEA Technology was expanded to include organic matter composting and re-use costs. r3 provided information on waste composting for the development of the enhanced model by AEA		
Start year	End year	Web link (if available):
2000	2000	

Title		
Web site for exSite Research Limited		
Activities		
Copy Writing; Information Dissemination; Information Review; Policy Review; Technical Authorship ; Web Site Development and Management		
Description		
exSite commissioned r3 to produce its initial web site. The web site has been handed over to exSite.		
Start year	End year	Web link (if available):
2000	2000	

Title		
Site Questionnaire And Information Management System For CLAIRE		
Activities		
Database Development; Information Review; Research		
Description		
CLAIRE (http://www.claire.co.uk) is the Contaminated Land Applications in Real Environments programme in the UK. This study was carried out in conjunction with JBJ Environment the Environment Body and provided suggestions for a project data management system. Funded by Research for Sustainability.		
Start year	End year	Web link (if available):
1999	2000	

Title		
Assistance with a Special Session for the NATO/CCMS Pilot Study on Contaminated Land		
Activities		
Information Review; Meeting and Conference Organisation		
Description		
The 2000 meeting of the NATO/CCMS Pilot Study on "Evaluation of Demonstrated and Emerging Technologies for the Treatment of Contaminated Land and Groundwater - Phase III" will include a special session on decision support systems (DSS). r3 in collaboration with the US Department of Energy in organising this special session for the Environment Agency of England and Wales and the USA EPA.		
Start year	End year	Web link (if available):
2000	2000	http://www.cluin.org/search/default.cfm?search_term=ccms&t=

Title		
Environment Agency R&D Project No P5-023, Sustainable Remediation / Environmental Merit		
Activities		
Information Review; Policy Review; Research		
Description		
This study was carried out for the Environment Agency in association with TNO and LQM Limited. The Agency required a review of the current information on assessing the environmental merit of remediation techniques for land contamination, and to identify criteria for its practical measurement that can be integrated with good practice procedures for selecting different remedial options and for considering the costs and benefits of different approaches.		
Start year	End year	Web link (if available):
1999	2000	http://www.eugris.info/displayresource.asp?ResourceID=3653&

Title		
exSite Research Limited Technical Support		
Activities		
Business Brokerage; Feasibility Studies; Information Dissemination; Information Review; Policy Review; Research Management		
Description		
ExSite was an Environmental body formed in 1997 and backed by many of the UK's major players in land remediation, from public, private and academic sectors. ExSite funded projects to develop and trial land remediation technologies on a field scale to help secure the practical re-use of post-industrial land. exSite is a funding organisation to develop and trial, on a field scale, land remediation technologies to help secure more efficient routes to secure the practical re-use of post-industrialised land. Its projects have specific aims for supporting the re-use of land : * through re-use of reclaimed materials, * securing the productive and commercial reuse of land as part of the reclamation process, and * demonstrating the commercial potential of post-industrial land re-use techniques. r3 assisted the development of its technical programme and continued to act as a technical advisor. ExSite's technical programme comprises three main areas r3 is also involved with two new exSite projects: a scoping study: Feasibility of and Approach to Establishing a Demonstration of "Marginal" Land Restoration, Combining Remediation, Waste Utilisation and Alternative Productive Land Use, and an investigation of the use of category analyses for assessing the performance of soil washing plant, analogous to the size category analyses used in waste management process assessment.		
Start year	End year	Web link (if available):
1997	2000	

Title		
Assistance with the International Ad Hoc Working Group on Contaminated Land		
Activities		
Information Review; Network Management; Policy Review; Technical Authorship		
Description		
<p>The Ad Hoc International Working Group on Contaminated Land is an informal forum for international collaboration and exchanges between international experts working for governments in the field of contaminated land policy. R3 has been involved in the databasing, review and interpretation of policy information gathered from the government organisations involved in the Ad Hoc Group. Previous publications from Ad Hoc Group activities are available, click here for details. For this project r3 has been working for the Dutch consultancy, TAUW Infra Consult, and the Centre for Research into the Built Environment, now Land Quality Management Ltd. The project was carried out for the Dutch Ministry of Housing Spatial Planning and the Environment (VROM).</p>		
Start year	End year	Web link (if available):
1997	1999	http://www.eugris.info/displayresource.asp?ResourceID=357&C

Title		
Environment Agency R&D Project No P5-14, Demonstration of Remedial Action Technologies for Contaminated Land (NATO/CCMS Pilot Study)		
Activities		
Information Dissemination; Information Review; Network Management		
Description		
<p>The Environment Agency has appointed Dr Paul Bardos as UK Pilot Study Manager for the NATO/CCMS Pilot Study on "Evaluation of Demonstrated and Emerging Technologies for the Treatment of Contaminated Land and Groundwater - Phase III. His responsibilities include UK Pilot Study liaison; reporting on the Pilot Study's progress; acting as a UK focal point for the Pilot Study; provision of conference and journal papers on the Pilot Study for a UK audience; assisting with links to other international initiatives, in particular the Contaminated Land Rehabilitation Network For Environmental Technologies (CLARINET) and the Network for Industrially Contaminated Land in Europe (NICOLE).</p>		
Start year	End year	Web link (if available):
1997	1999	http://www.eugris.info/DisplayResource.asp?ResourceID=3663

Title		
Technical support on composting for the Eden Project, a Millennium Project in Cornwall		
Activities		
Technical Advice / Consultancy		
Description		
r3 supported the early development of soil substitutes from green waste composts for the Eden Project.		
Start year	End year	Web link (if available):
1999	1999	

Title		
Development of commercial / financial service products for recycling / land / waste management for a UK concern		
Activities		
Technical Advice / Consultancy		
Description		
Member of expert panel for the development of technical protocols for a financial service product to facilitate the re-use of organic materials		
Start year	End year	Web link (if available):
1998	1999	

Title		
Assistance with contaminated land and waste management service development for LGC (Teddington) Ltd		
Activities		
Business Brokerage; Market Consultancy		
Description		
Assistance with a business start up, including client identification and (successful) proposal development.		
Start year	End year	Web link (if available):
1998	1999	

Title		
UK remediation market advice for a leading Dutch research organisation		
Activities		
Business Brokerage; Market Consultancy		
Description		
Business start up support, identifying potential opportunities for contaminated land research services in the UK and determining if a market entry was warranted.		
Start year	End year	Web link (if available):
1997	1998	

Title
CLAIRE (Contaminated Land in Real Environments) Feasibility Study
Activities
Business Brokerage; Feasibility Studies; Information Dissemination; Information Review; Network Management; Policy Review; Research Management

Description
<p>This study examined the overall scope for, and feasibility of, field scale test sites in researching, developing and demonstrating techniques and technologies for the remediation of contaminated land. The study identified the relevant interested parties, consulting with and involving them, as appropriate, in the development of CONCEPT (= Contaminated Sites for the Evaluation of Potential Technologies). The study determined the requirements for CONCEPT sites and presented a framework for their development and use drawing on the comments, guidance and advice from interested parties. Strategies for funding and organisation were discussed and an initial costing for the initiative made. Strategies were suggested for research and development activities, demonstration and verification and information dissemination.</p> <p>The project was carried out in association with Parkman Environment and A&S Associates, and developed from an original idea arising from discussions between industry and academe. The project was supported financially by English Partnerships, the Environment Agency & the Department of the Environment, Industry and the Welsh Development Agency. Industry support was co-ordinated by the Soil and Groundwater Technology Association. These organisations and many others also made substantial intellectual contributions to the project.</p> <p>R3 continued to advise on CONCEPT via a consultancy with English Partnerships over 1997/98.</p> <p>In 1998 the initiative was rebadged as CLAIRE and launched as a Private-Public Sector partnership by the Deputy Prime Minister, Mr John Prescott. Operations began in 1999. Web link: www.claire.co.uk</p>

Start year	End year	Web link (if available):
1997	1998	

Title
Composting Trials for a UK Consumer Group
Activities
Research

Description
r3 carried out various home composting trials for a leading UK consumer group to evaluate the effectiveness of a range of approaches and products for accelerating the composting of garden and kitchen wastes.

Start year	End year	Web link (if available):
1997	1997	

Title		
Review and Management of Research on Remediation Technologies		
Activities		
Information Review; Network Management; Policy Review; Research ; Research Management		
Description		
This project was carried out for the Department of the Environment and the Environment Agency through the Centre for Research into the Built Environment and SRK (UK) Ltd. One of the main outputs of the project was a review of the international state of the art in contaminated land treatment technology research with a framework for treatment process technology research in the UK. The project also included technical review of Dept Environment / Environment Agency remediation technology R&D projects, and international liaison, in particular management of the UK contribution to the NATO/CCMS Pilot Study on Remedial Action Technologies (Phase II).		
Start year	End year	Web link (if available):
1997	1997	

Title		
Soil Washing Verification Review - Basford		
Activities		
Research ; Technical Advice / Consultancy		
Description		
Advice on contaminated land remediation technology verification for a leading UK plc, peer review of procedures suggested by Parkman Environment		
Start year	End year	Web link (if available):
1997	1997	

Title		
Advice on waste management for the Millennium Exhibition to a UK consultancy		
Activities		
Technical Advice / Consultancy		
Description		
Start year	End year	Web link (if available):
1997	1997	

Title		
Contaminated Land Ready Reference		
Activities		
Information Dissemination; Information Review; Market Consultancy ; Research ; Technical Authorship		
Description		
r3 and LQM at Nottingham University and EPP Publications produced a manual for supporting contaminated land management activities encompassing site investigation, risk management and risk management.		
Start year	End year	Web link (if available):
1999	0	www.readyreference.co.uk

Title		
Composting R&D with Earth Science Partnership		
Activities		
Market Consultancy ; Research		
Description		
R&D developing new compost systems as a collaborative venture with Earth Sciences Partnership via SMART funding from WDA through ESP.		
Start year	End year	Web link (if available):
2004	0	www.espwales.co.uk

Title		
Assistance with the MSc on Contaminated Land Management at Nottingham University		
Activities		
Training and Training Materials		
Description		
Remediation module development, maintenance and lecturing input		
Start year	End year	Web link (if available):
1997	0	
