Workshop on Re-using Brownfield Sites and Buildings
1. Challenges and opportunities

There is no common European definition of brownfields. The European expert network CABERNET (Concerted Action on Brownfield and Economic Regeneration Network) comments that in common usage brownfields refer to ‘previously developed land or derelict land, encompassing a range of sites in terms of size and location’.

More specifically, CABERNET defines brownfields as sites which:

- have been affected by former uses of the site or surrounding land;
- are derelict or underused;
- are mainly in fully or partly developed urban areas;
- require intervention to bring them back to beneficial use; and
- may have real or perceived contamination problems.

This definition emphasises issues of dereliction, contamination and intervention, themes that were picked up in the debate on innovation in the plenary session of the Regions for Economic Change conference on 20 and 21 May 2010 in Brussels. The European Commission has long advocated the re-use of brownfield sites. More recently, it has encouraged cities participating in Fast Track projects under Regions for Economic Change (in either INTERREG IVC or URBACT III).

‘Re-using urban brownfield and contaminated landfill sites for development is socially, economically, environmentally and culturally important for the development of our cities and regions and a valuable alternative to urban sprawl. Cities and regions working on this theme will aim to develop projects to re-use abandoned urban industrial, military or port sites’.

In the workshop on ‘Reusing Brownfield Sites and Buildings’ held after the plenary session, the main issues that were addressed were:

- Integrating brownfield development into a comprehensive land use strategy for an entire urban area (whether a metropole, a city region, a polycentric group of cities or a single city) that links constraints on greenfield development and encouragement of brownfields.
- How to address the high rate of brownfield creation in Europe. The current economic and financial crisis has led to considerable new problems including brownfields from commerce, housing, infrastructures and the tourist sector.
- Ensuring that policy makers take account of different stakeholder perspectives when considering brownfield development.
- Brownfield sites need to be prioritised in relation to economic realities. This can be done according to whether the site is self-developing without assistance (type A), is a potential development site requiring some assistance (type B), or is a reserve site (type C) that requires so much support that it cannot be developed without heavy public support. Because the market failures that justify public interventions vary in their degree, the intervention itself needs to be calibrated.
- The need to take a long-term and ‘circular’ view with all development by recognising that all of our development interventions are temporary, whether for ten, twenty, fifty or five hundred years.
- What role could the ERDF play in encouraging good practice and what should the provisions be after 2013? Could integrated land management be enhanced in the Urban Dimension of the ERDF – for example by specific initiatives of the European Commission as part of an EU cohesion policy? How can these provisions, conditions and incentives encourage a move towards more compact, sustainable and cohesive cities that avoid sprawl?

Re-using Brownfield Sites and Buildings

The frame for the workshop had been set by discussions at the plenary session of the conference. The focus had been on innovation, and particularly how it was going to be necessary for the EU 2020 vision of smart, green and inclusive growth. Commissioner Máire Geoghegan-Quinn quoting Albert Einstein said ‘We cannot solve our problems with the same thinking we used when we created them.’ In the panel discussion, the role of regional innovation systems as well as social innovation had been emphasised. Claudia Kemfert3 followed with an impassioned speech on peak oil and the importance of carbon capture and storage, bringing home the need to accompany the technological fixes with widespread societal change to wean us off our addictions to carbon-producing fuels.

In all of the vigorous debates in the plenary session, however, no mention had been made of the role of land as a key resource and driving factor in the new 2020 strategy. Land will inevitably play a key role just as it did when nineteenth-century economist David Ricardo first identified it as a factor of production. Land is also important for food security, a critical issue if the recent reports suggesting that we might also be near peak food are borne out.4

Land use and re-use are critically important for creating greener smarter cities with shorter journeys for people to make to work, high quality of life and accessible leisure and retail opportunities. In Europe’s polycentric urban morphology the high quality environment could quickly erode if gaps between cities are simply filled in with sprawling development. Re-use of brownfield land offers some hope for containing the carbon footprint of cities.

Governments have been slow to get behind efforts to re-use brownfield land. Only the UK has a national register of brownfields and national targets to use brownfields for different forms of development including housing. However, the lack of a European definition was revealed shortly after the conference when the new Conservative government in the UK announced that ‘garden grabbing’ would not be permitted under new planning laws. The former government had included domestic garden sites within their brownfield definition with the result that one in four houses built had been built on former garden sites. This is a good example of how a combination of regulation and incentives can dramatically influence the behaviour of the development industry, and not necessarily in a good way. It also shows the need for EU wide definitions of brownfield land and a recognition that there are degrees of brownfield.

The ERDF has supported actions to recycle land since its launch in 1975. The first generation of Community Initiatives focused on former coalfield and steelwork sites in the Rechar and Resider programmes. Textile industry areas and shipyards were transformed under Retex and Renaval. Meanwhile the former Objective 2 programmes concentrated on areas in industrial decline with high unemployment.

Brownfield sites are both a challenge and an opportunity. Although the technical problems of restoring brownfields are mostly understood, the challenge is to remediate at an economic price and so that brownfields can have a useful after or second life. In the context of the 2020 vision for Europe the re-use of land could be a major contributor to the smart, green and inclusive growth agenda. This could be combined with so-called ‘cradle to cradle’ architectural solutions in which materials and buildings are designed for re-use5.

Re-use itself is the second in the 3Rs6 of waste recycling – reduce, re-use and recycle. In the context of land-use, reduce must mean to be more efficient in our land utilisation – doing more with less and building more compact cities. Re-use entails finding a second use for a structure that was originally built for a different purpose for example by using a historic military dock as a tourist resource. The third is recycling; and perhaps in the context of brownfields it is more often such recycling that we are considering than actual re-use. Where we do see re-use is in the imaginative re-use of buildings (see the RDM innovation dock example in Chapter 2 below) in heritage sites, military installations, religious buildings and dockyard waterfront development.

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3 Head of Department, German Institute of Economic Research; «Sustainable Energy and Climate Change: Challenges for Regional Policy Solutions» http://ec.europa.eu/regional_policy/conferences/sustainable-growth/doc/presentations/sq_kemfert.ppt
4 http://ipsnews.net/news.asp?idnews=33268
5 http://en.wikipedia.org/wiki/Cradle_to_Cradle_Design
6 The 3Rs originally referred ironically to the basic skill set of Reading, wRiting and aRithmetic; but it has been adapted by the waste recycling movement to refer to reduce, reuse, and recycle.
The workshop revealed the varied range of use of the word ‘brownfield’. When policy makers use the term they often have in mind heavily polluted former industrial sites with difficult subterranean structures and high levels of risk for the developer. Examples of this include the Ruhr steelworks, the slag heaps of Nord Pas de Calais and South Wales, and the chemical pollution that turned the town green in Bittefeld in Saxon Anhalt, Germany.

Not all brownfield sites are like this, however. The shrinking cities of Eastern Europe contain many ‘greyfield’ sites also covered by the term ‘brownfield’, made up of abandoned system-built housing, schools and other social facilities and shopping centres.

At the other extreme, household and industrial waste have created thousands of hectares of landfill sites surrounding European cities. The cost of developing these different types of site can be high or low and depends to a large degree on the costs and associated risks of developing, to use Donald Rumsfeld’s now famous phrase, known unknowns. Brownfield sites thus exist on a continuum.

1.1 DEVELOPING A MODEL FOR INTEGRATING BROWNFIELD DEVELOPMENT INTO LAND USE PLANNING

In his presentation Dirk Engelke of the University of Karlsruhe, Germany illustrated how the problem of brownfield development has been tackled in a more integrated way by practitioners, using four examples. These were as follows:

- **IBA Emscher Park.** Public authorities turned part of the heavily polluted industrial area of the Ruhr into this place of enterprise and leisure, including a bike network, from 1989-1999. €2.5 bn was spent on 120 linked projects. No one could have imagined the transformation of this once devastated landscape 20 years ago.

- **Bilbao RIA 200.** Flagship investments such as those of the Guggenheim and the new Metro were used as part of a joint strategy to transform this old industrial area of Bilbao.

- **Stuttgart Sustainable Land Use Management.** Here clusters for the urban area are defined, then different territorial options considered, then decisions made as to which category the land belongs, brown or green field, after which individual projects are embarked on.

- **Saint Étienne Métropole.** The metropole has reviewed its development potential, prioritising sites, identifying drivers at metropolitan or municipal level, and differentiating between short and long-term interventions.

The major lesson from these examples is that brownfield site development needs to be organised as part of a wider development strategy that includes greenfield areas as well.

Engelke currently leads the URBACT project LUMASEC in which the cities are attempting to develop a modus operandi for the integrated approach in this new land development paradigm. Their four-level model involves intervention across three conceptual layers: ‘capacity’, ‘governance’ and ‘spatial pattern’, all built on a fourth ‘real world’ layer (see figure 1 below).

**Figure 1: LUMASEC four-level model**

This model has been developed and tested with four partner cities in the LUMASEC working group.
Governance: Stakeholders involved (e.g. private sector, civil society), structures, processes and tools of governance; metropolitan governance at a higher level than the individual municipality

Capacity: Participation of inhabitants and other non-professional stakeholders; awareness and political backup for land use and its management; competences to deal with complex problems and tools at both the policy and administrative level

Spatial patterns: Mapping existing patterns; getting an overview on development potentials; traditional land use planning (e.g. building permits and spatial policies)

Real world: Creating an image of the reality by different professions; mapping indicators and competences; getting and sharing an understanding of the use of land; setting up a management approach by intervention on different layers

In his presentation Engelke argued that in the LUMASEC partner approach they start with the strategy rather than with, or from, the individual site, using different professions to create an integrated image of the reality – mapping structures, identifying the need for land-use tools, involving stakeholders. Rather than starting with each individual project, identifying integrated financial tools is a good way to push towards integrated thinking. However, the final result must be the actual development of individual project sites.

St Etienne has been grappling with its own industrial legacy and working at the supra city level to promote better use of brownfields and reduce the dependence on greenfield sites for new development.

In the current financial crisis, it is increasingly difficult to find private investors, especially as they are only interested in individual projects, and will never finance overall strategies. The public sector thus needs to create the link between projects and counter-balance financing, giving more to those areas where less private money is available.
1.2 LANDFILL - 300,000 HECTARES OF BROWNFIELD LAND

René Beijnen9, who here represented the SufalNet4EU10 project, started his presentation with a jokey visual image showing how city planners tend to work around problem areas of cities. This is particularly true of landfill sites where 150,000 landfill sites now exist in Europe covering 300,000 hectares of land. In the past, one particular problem was that there was inadequate separation of toxic waste from household waste. These historic landfills present a huge challenge.

These sites generate serious problems for local people and for society as a whole with the production of methane gas into the atmosphere and the contamination of groundwater, which can affect local communities and create more problems downstream. Where lack of regulation or corruption allowed dangerous wastes to be deposited alongside household waste the sites can produce a lethal cocktail: to use Rumsfeld’s phrase again, these are the ‘unknown unknowns’, that keep developers of brownfields awake at night and lead them to prefer the safety of greenfield sites.

Not all landfill sites can be regenerated, due to poor location and distance from urban areas, as well as difficult and risky conditions; however, many can be brought back into new use.

Like many complex problems, the issue of landfill sites is multi-level, multi-stakeholder, and often dependent on complex land economics and the market. In multi-level environments the EU contributes through regulation; the public authorities operate the planning system but also dispose of waste; and there are landowners – in some cases absent and landfill operators. All of these ‘actor’ stakeholders impact on the local community living near the landfill.

It is rarely feasible to remove the landfill and clean the site because of the high cost and the fact that this would merely displace the problem instead of solving it. The solution is to find new uses that can contribute to the cost of development, though public funding will normally still be needed to make the site financially viable.

The key issues facing cities working with brownfield sites and the many actors involved range around the relationship between risk and financial returns. Beijnen showed the diagram in Figure 4 (below) to illustrate the complex decision making in brownfield development.

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9 René Beijnen’s presentation can be seen at http://ec.europa.eu/regional_policy/conferences/sustainable-growth/doc/presentations/2c_beijnen_sufalNet4EU.ppt
10 SufalNet4EU was funded from 2005-2007 under the Interreg IIIC programme and involved 21 partners from 12 Member States who worked on developing a model strategy. This work has been followed by an Interreg IVc Capitalization project 2010-2011.
1.3 CIRCULAR APPROACHES TO LAND USE: STOCKS AND FLOWS

In a controversial contribution, Uwe Ferber of the Projektgruppe Stadt und Entwicklung argued that we are creating brownfields faster than we are regenerating them. In many parts of Europe, he pointed out, there may be too much developable land available already for the needs of the population. We have been discussing brownfields for thirty years with no solutions, and the nature of brownfields is changing. The risk is, he suggested, that the supply of brownfields produced by the economic crisis and demographic change is increasing faster than our ability to transform them for new uses through regeneration.

Over time, the character of brownfield development in EU programmes has been changing. Three generations of brownfields can be identified:

- The first generation focusing on coalfields and steelworks, and funded under Rechar, Resider, Renaval, Retex as well as by Objective 2 programmes (and some Objective 1)
- The second generation focusing on military and urban sites funded under Konver and URBAN
- The third generation focusing on greyfield sites and on urban locations

One way of looking at the economics of development of brownfield sites is to use the ABC model, developed by the research Framework programme funded CABERNET network, which segments sites according to economic potential based on the cost of regeneration and the value of the land after remediation. CABERNET classifies sites as:

- A Sites - These represent development projects that are driven by private funding (and do not need public support to be redeveloped).
- B Sites - These projects are characterised as being on the borderline of profitability. They tend to be funded through public-private co-operation or partnerships.
- C Sites - These projects represent mainly public sector or municipality projects driven by public funding or specific legislative instruments (e.g. tax incentives).

Figure 5: The triage of brownfield development sites as classified by CABERNET

The A-B-C model highlights the cost, funding and revenue drivers for brownfield regeneration. It can also assist institutions that are responsible for regional development.

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11 Uwe Ferber is also lead partner of the Bring Up project and a member of CABERNET. His presentation can be seen at http://ec.europa.eu/regional_policy/conferences/sustainable-growth/doc/presentations/2c_ferber.ppt

12 CABERNET is the concerted action on brownfield and economic regeneration network http://www.cabernet.org.uk/index.asp?c=1124
and investment by enabling them to review strategies for dealing with different types of brownfield land. In practice, around 70% of brownfield land has been in the hard-to-develop C category and both developers and local authorities avoid these in favour of A or B sites. As a result, ERDF funding in convergence cities has tended to focus on the C-category for example in Saxony.

In a circular land use model, Ferber argued (see figure 6 below) that we need to look at the flow into the brownfield stock as well as the flow out through regeneration. This will become more important as more and more urban construction loses its economic or social viability (e.g. system-built housing estates, empty public institutions such as schools, health centres, retail shopping centres, and office buildings). When buildings are first approved for development we should already be thinking what will be the second life of the site in ten to twenty years time. Otherwise, we risk creating future brownfields at a faster rate than we are dealing with them now through regeneration.

Figure 6: The circular model of land use

Ferber stressed that we also need to think much more about financial viability and timing. There may be sites that we should ‘park’ for ten years and use for alternative productive uses. These uses could include energy production through growing crops for biofuels, using the site for solar panels or other renewables, or even finding temporary leisure and cultural uses. This type of temporary use might need ERDF funding to make it possible. These temporary uses should be actively supported.

Ferber went on to argue that there is a risk of being too strong on conditionality within the ERDF and focusing on the worst most contaminated brownfields. Prioritising the re-use of the most difficult sites can consume vast amounts of resource for little economic or social benefit. Often returning these sites to nature is more cost effective. Overall, the ERDF should be spent as part of a coherent strategy for the whole area in a way that achieves the maximum advantage measured in social, economic and environmental terms. Here instruments like Jessica may be the best way forward because a team running a structured urban development

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13 See http://www.brachflaechenrevitalisierung-sachsen.de/
fund can appraise and subsequently invest in a package of sites from a financial point of view while taking into account economic, social and environmental returns. The advantage of package type approaches of this sort is that the packages can allow priorities and resources to be balanced. The key is to work on medium term (5 year plus) land strategies at the most appropriate spatial levels.

Ferber pointed out that the current financial crisis was to some extent the product of urban sprawl. In the USA urban sprawl was not regulated. There were therefore few constraints on the supply of housing, which provided the banks with the opportunity to lend to marginal sub-prime clients in equally marginal locations. Good planning is therefore vital as part of a solution to avoid large speculative overhangs in both residential and commercial property markets.

1.4 INTEGRATING BROWNFIELD SITES AND BUILDINGS INTO BALANCED SUSTAINABLE DEVELOPMENT

Iván Tosics of the Metropolitan Research Institute in Budapest explored the connection between re-using land and a more integrated approach to urban regeneration and development. He reminded us of the need for a paradigm shift away from sectoral approaches towards integrated development. Sectoral approaches always produced negative externalities – tackling one challenge such as economic growth creates problems for the others, usually the environment and social cohesion. Until now, economic growth has always come at the price of increased resource consumption and a growing environmental footprint. Many examples exist of how these tensions play out in practice: low-carbon housing is too expensive, affordable housing is not sustainable, compact development can crowd out the poor (by inflating land values), and new shopping centres accelerate the decline of traditional shopping streets within reach of the poor.

Urban brownfields and urban land markets are very different in Eastern and Western cities. Land markets in former centrally-planned countries have high land values in the centre but these do not decline evenly from the centre outwards as they do in most Western European cities; sometimes values even increase towards the edges. Over time there are likely to be adjustments in the land markets of the Eastern cities, which could move land values upwards in the centres and down at the periphery. Economic change also creates different opportunities in different cities.

Brownfields offer a real opportunity to develop place-based approaches. The C-Mine development in Genk (see 2.4) illustrates how far this can go with an example of a creative industries and education hub created out of a former coalmine.

Creative linking of problems and opportunities is to be welcomed, as in the case of Bologna (case study from the Nodus URBACT project). Oslo and Hamburg have used returns from selling centre city brownfield sites to develop new industrial areas in outer locations. More creative financial solutions are needed to achieve this effect of skimming the benefits of development from one location and then deploying the receipts in another location.

Tosics contrasted Budapest and Malmo to highlight the way that fragmentation approaches, the opposite of the integrated approach, had led to low-quality solutions. In post-Communist Eastern Europe numerous large factories had been closed and converted to new uses with no imagination and few resources. One factory in Budapest without adequate planning, of a large factory had led to a sub-optimal result. The building had been sublet to numerous tenants, but none had the capacity for overall organisation. The result was a scrappy building with a temporary makeshift appearance. On the other hand, some abandoned spaces have found new uses as informal cultural and performance spaces.

14 Ivan Tosics is also lead expert of the URBACT II working group NODUS and Regio Star jury member
http://ec.europa.eu/regional_policy/conferences/sustainable-growth/doc/presentations/2c_brownfield.ppt
In contrast, Malmo had used the decline of its shipbuilding as an opportunity to build high-quality, low-carbon housing and an attractive new waterfront commercial development in a stunning setting.

Tosics pointed out that there is an essential role to play for cohesion policy because it alone provides the appropriate tools of multi-level governance and integrated cross-sectoral policies. It can link the EU-wide experience and resources with the local goals and ambitions.

THE IMPACTS OF STATE AIDS ON THE INCENTIVE DEBATE

No discussion of the possible incentive structure behind brownfield development would be complete without considering how state aids impact on urban regeneration projects.

The rules on the control of state aid in the EU are set out in Article 87 of the EC Treaty. This article provides that state aid is in principle incompatible with the common market. Article 87[1] of the EC Treaty can be broken down into four tests to establish if a measure within an urban regeneration scheme constitutes state aid. A state aid is deemed present if all four tests are met:

- Does the measure distort or have the potential to distort competition by selectively favouring certain beneficiaries?
- Does the measure produce an effect on intra-Community trade?

Article 87[2] and Article 87[3] contain a number of exemptions under which state aid shall or may be considered compatible by the Commission. In exercising its discretionary powers for the application in particular of Article 87[3] exemption, the Commission balances the importance and the necessity of the aid measure in achieving a Community objective versus the distortion of competition brought about by it. In its vademecum of March 2006 (European Commission, 2006) the Commission outlined the application of state aid provisions to regeneration15.

CABERNET have criticised the Commission’s position on state aids of brownfield sites arguing that rather than limiting market displacement, the law actually prevents forms of market enhancement that would allow the public and private sectors to work together in a more cost-effective way. To comply with the rules genuine public-private partnership schemes (in which both sectors participate in the same phases of a project) have been replaced by sequential wholly public or wholly private phases. In the earlier public phases (land assembly and remediation), the public sector bears the costs and the risks. In the later phases the private sector takes advantage of a cleaned and certified site to develop the site with completed buildings. Like many laws the unintended consequences (all costs and risks borne by the public sector) may be worse than the problem (in this case unfair competition) that the law was trying to prevent.

One casualty of the Commission’s position was the UK’s English Partnerships ‘gap funding scheme’. Gap funding essentially works by calculating the net present value of a scheme after development with the costs required to develop it and also to provide an acceptable rate of return for the private sector (i.e. enough to encourage them to do the development, but not so much as to enable rent-seeking behaviour). Where there is insufficient future revenue for the private sector to proceed, the public grant is used to finance the ‘gap’.

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The gap-funding model used by English Partnerships had been a well-developed approach throughout the UK. It was discontinued in the early 2000s following discussions with the Commission on state aids issues. Similar versions still exist in other Member States and the grant for the Czech case study in this paper appears to have been structured in a similar way. The assumption had been that provided all transactions were conducted at market value no state aid is deemed to apply.

In general, discretionary measures such as gap funding are more cost effective than universal measures such as tax incentives. This is because they can be limited to commercially non-viable projects (type B in the CABERNET classification above). Tax incentives are likely to have high levels of deadweight (where development would have taken place without the incentive) especially where they are granted to type A sites.

Despite the advantages of discretionary measures, there are good reasons for the Commission’s concern. Some member States (including the UK) were prone to using gap-funding techniques to finance developments aimed at single known end-users. These included some celebrated inward investments for the car industry. Gap funding was combined with other direct subsidies to create a complex and non-transparent aid package.

Despite these high profile examples, most urban regeneration sites do not involve state aid because they do not distort trade between member states. In cases where regeneration involves compatible aid, member states have to show that the proposed measure is well designed, proportional, and well targeted16.

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16 The arguments in this section were taken from a REVIT publication by Nico Groenendijk 2006 'Financing techniques for brownfield regeneration – a practical guide' REVIT
2. Examples of good practices

The second half of the workshop comprised presentations by six speakers who gave examples of good practice. The good practices discussed ranged from the Regiostars winner in the brownfield category, the C-MINE project that had converted a former coalmine in Limburg, Germany, to re-vitalising urban neighbourhoods in Szczecin, Poland using the new Jessica instrument. The projects covered a range of experience and brought out some of the theoretical issues explored above. In addition the example of the regeneration of a brownfield military site at Chatham naval dockyard has been added from the URBACT project REPAIR.

2.1 WEST POMERANIA – RENOVATING URBAN NEIGHBOURHOODS USING PACKAGES OF PROJECTS AND THE PROPOSED USE OF JESSICA

Robert Michalsky of the Regional Government (PL) of West Pomerania gave a presentation on local revitalisation programmers in his region. West Pomerania has developed an area-based approach called Local Revitalisation Programs (LRP). There is one strategy for these programmes and two instruments, one based on traditional grants and the other based on the innovative financing instrument JESSICA.

The concept behind these programmes is of integrated projects made up of a package of sub projects. These are concentrated on a geographic area. The aim is to concentrate on making lasting change to economic, social, environmental and cultural conditions in the area. The major change has been the idea of the package of projects. Instead of applying for one project, the promoters now put together a coherent set of projects to tackle a number of problems at the same time.

Their approach combines different forms of intervention. It uses ERDF grants for infrastructure both on regeneration of urban areas and housing infrastructure. ERDF loans and equity are deployed through urban development funds using the JESSICA instrument. In addition, the packages of projects use ESF and other public and private resources.

The Managing Authority has played a pro-active role in developing the market for urban development funds. It had also convinced the cities that it is worth their investment of time and effort. Although the first reactions from cities were negative, there is now a positive attitude and the programme is over-subscribed.

Under the programme, Szczecin will receive ERDF funding of €25 million. A similar allocation is being spent in the rest of the region. The central area of Szczecin has been selected as the main area for integrated development.

The key to working out financially viable packages is to split the area.

- ERDF grants are used where the investment is mostly on social spaces and housing. One example has been the development of the inner courtyards of housing estates that had become decrepit and were only used as car parks. Now they have created a vibrant ambient zone with a winding pedestrian ‘green’ path. These infrastructure improvements are combined with small-scale community-based projects focusing on particular parts of the community such as children, youth and the elderly.

- The Jessica supported Urban Development Fund will support the construction of appartments for sale and offices. The office jobs will be in service sectors located in green surroundings.
The main problem has been time. It has taken two years to work up potential Jessica projects and a further 12 months to organise the call for Urban Development Funds. Despite frustration over delays, the local municipalities have responded and now there is too much demand for Jessica. Obtaining EU approval under state aids is needed to avoid further delays.

2.2 A PRIVATE COMPANY USING THE ERDF TO REGENERATE A BROWNFIELD SITE – EXPERIENCES IN CZECH REPUBLIC

Lubar Valek gave a presentation on their experience as an SME applying for ERDF finance for a brownfield development. Point CZ is a medium size printing company founded in 1993 with its head office in Brno. It has 140 employees. They wanted to focus their expansion in a suburban area of Brno.

In 2006, they bought a plot of land and were advised to ask for European funding. This involved the demolition of a former cowshed on the site.

The building phase of the project involving demolition of the cowshed and erection of a 2000 sq m production facility took 14 months to complete at a cost of €1.275 m of which €0.75m was eligible and half of this amount was ERDF (about 0.375m). They have combined with the city council to build a sewage plant.

They found the ERDF environment complex and time consuming. The Czech Republic with 24 programmes has more than any other Member State. These programmes contain hundreds of sub priorities and measures.

It took Point CZ over a year to obtain project approval from the Managing authority, which is a long time for a private company. In addition, they also found it difficult that there was no potential for negotiation on the amount of the grant. Because of the slow speed of decision making there were many changes to prices and each one had to be discussed with the ministry. The company started the investment without knowing whether they would get the money or not. Despite the problems, the renovation of the brownfield site and the new jobs brought to the community had a very positive effect on the settlement.

The key issue raised in the presentation is whether private companies should apply directly to ERDF programmes or should there be package schemes (e.g. through an urban development fund under Jessica) to operate as an intermediary working with the end-user?

Picture 3: Presentation by Lubar Valek - Point CZ
2.3 RDM INNOVATION DOCK ROTTERDAM

Cor van Asch, Project from the Port of Rotterdam and Ruud van Raak, Programme manager of ERDF West Netherlands presented the RDM Innovation dock in Rotterdam. The RDM Innovation dock took over a 40 hectare derelict wharf building that had closed in 1983. At the time 1370 people were made unemployed which particularly affected a local model suburb that had been built for workers the Heijplaat village. Some activity continued on the wharf until about 2002 but from then on the wharf became a ‘no-go’ area.

The huge building was renovated with support from the public and private sector and used ERDF funding of €2million (out of total costs of €7.7m) under the programme for West Netherlands 2007-13.

The project built on the ideas of the Rotterdam Climate Initiative – an initiative in which government, organisations, companies, knowledge institutes and citizens collaborate to achieve a 50% reduction in CO₂ emissions. The project is focusing on the construction of sustainable buildings on land and water, “smart” mobility and technology for renewable energy (using water from the nearby river Maas for heating and cooling). The plans for the future also include connecting the business zone and village through the development of housing and accommodation for conferences and other meetings.

The partnership includes the Port of Rotterdam Authority, the Albeda College - a large comprehensive school for intermediate vocational training - and Rotterdam University.

The project RDM Innovation Dock is being developed over three phases. The first and second phases involved the renovation of the former machinery hall, adapting it for educational purposes. The third phase will be the reconstruction of a 12,000m² former shipyard hall into a business hotel. On the ground floor-level, 30-40 individual business units (200 m²) have been created, while smaller lots for rent are available on the second floor.

Writing in mid 2010 the innovation dock already has 30 companies and 800 students working in it. In the RDM Innovation Dock students and companies collaborate in an open environment and focus on new economic activities and sustainable and innovative solutions in the markets Building, Moving & Power supply.

2.4 THE C-MINE IN GENK: CONVERTING A MINE INTO A CULTURAL AND EDUCATION CENTRE

Michael Doore gave a presentation on the C-Mine in Genk which was the winner of the Regiostars award for 2010. Genk is a small city in Limburg with 65000 people which had attracted miners from all over Europe to its three mines. But 25 years ago the mines started to close and 7000 miners lost their jobs. The former owner cleaned the area after closing. Winterslag C-Mine is the heart of the city. The buildings are classified as historic buildings.

The project was financed under the Limburg Objective 2 Programme 2000-2006 and the Flanders RCE Programme 2007-2013. The project started in June 2005 and will be completed in November 2010. The total cost of € 8,917,442 includes ERDF of € 3,178,197.

Many different organizations were involved in a wide partnership. Finance came from ERDF Limburg and the city of Genk.

The C-Mine hub is built on four inter-related drivers:

- Artistic creation: space for contemporary culture and artistic productions;
- Recreation: the C-Tour is a unique mining experience which leads you from the underground passages up to the mine buildings;
- Higher education: establishment of the Media and Design Academy (product and graphic design, animation and video as well as continued professional training);
- Creative economy: creating links between knowledge, innovation and entrepreneurship.
The city is developing a cluster of related initiatives tapping into the knowledge of higher artistic education in Genk, Limburg with entrepreneurship and creative innovation at company level, which include:

- **Design Innovation Lab** to support creative innovation in companies. This would be a knowledge and service centre that supports companies in their creative innovation needs and plans. The concept is based on a few key people who are surrounded by a wide network of experts involved in various (creative) fields and tailored to the demands of the business.

- **Centre for creative business innovation and entrepreneurship.** The centre focuses on art institutions, entrepreneurs, companies that want to include creative innovation in the development of their product and service. This is facilitated by a multifunctional space for creative projects and services, including meeting and workspace for the Design Innovation Lab; for project groups, collaboration platforms, start-ups; for students; for training courses, seminars;

- **Incubation centre for the creative economy** in order to avoid the brain drain of skilled young graduates from the art colleges of Limburg. The city is developing entrepreneurship through incubation space for creative economy (location for 12 business start-ups, shared specialised technical facilities).

- **Space for organising innovative corporate events.** A former machine building is being designed as a multipurpose room where innovative company events, fairs, seminars, exhibitions, can be organised.

There are direct partnerships with the Media and Design Academy. There is also a model of cooperation with various universities and research institutes, such as the University of Leuven and Hasselt, ‘Flanders in Shape’, ‘Design region’ and ‘Design Platform Limburg’. These institutions are working with the city to prepare for the development of the Design Innovation Lab.
The URBACT project REPAIR\textsuperscript{17} was unable to be present at the seminar but their experience of regenerating military sites adds a valuable dimension to discussions about regenerating brownfield sites.

The lead partner of the URBACT repair project is the Medway Council. They have worked with partners to develop the Chatham naval dockyard. In its heyday, this dockyard built over 500 ships for the Royal Navy, and was forefront of shipbuilding, industrial and architectural technology for 400 years. At its height, it employed over 10,000 skilled artisans and covered 160 hectares. Chatham dockyard closed in 1984, and 34 hectares of the Georgian dockyard is now managed as a visitor attraction by the Chatham Historic Dockyard Trust.

Twenty five years after the closure of Chatham Dockyard, the 140 hectare site has been transformed into a thriving business, education, leisure and residential community, combining high quality urban planning and design with the most stringent environmental and sustainability standards. To date in excess of £850m of public and private funds has been invested in Chatham Maritime.

The regional development agency SEEDA has built one of the top three business locations in Kent at Chatham Maritime with 120,000sqm of office space providing over 3,500 jobs. Companies that have already moved into Chatham Maritime include Kent Police, Natwest Bank Plc, Halifax Plc, MHS Homes, Lloyd’s of London and Xchanging.

Dickens World, a £62million visitor entertainment complex dedicated to the life and times of Charles Dickens opened in 2007. A multi-screen Odeon cinema and six new restaurants have also been built next to Dickens World.

Three hundred jobs have been created at the Dockside Outlet Centre, which opened in May 2003. Situated in the former Boiler Shop, a Grade II listed building, it has been converted and extended to house over 80 shops, selling clothing, luggage and home furnishings from High Street names including Marks and Spencer.

A major new University Campus for the Universities at Medway, made up of the University of Greenwich, the University of Kent, Canterbury Christ Church University and Mid-Kent College. This £50m partnership is supported by Communities and Local Government (CLG), SEEDA, Medway Council and the Higher Education Funding Council for England (HEFCE) and is playing a key role in providing the skills and learning opportunities needed to create thriving and sustainable communities in the Thames Gateway.

Over 10,000 sqm of listed buildings have been converted to provide a learning resource centre and lecture theatre and 6,000sqm of new teaching accommodation has been opened to the campus. Student numbers will soon reach 7,000 and this is expected to rise to 15,000 by 2012. More than 200 student flats have been completed.

Chatham Maritime has applied for World Heritage status for the site. Medway Council is the lead partner of the URBACT REPAIR network which works on sustainable development of former military sites.

The transformation of Chatham naval docks reveals that former military sites can be reused to become new centres of development.

\textsuperscript{17} http://urbact.eu/en/projects/cultural-heritage-city-development/repair/our-project/
In such a packed agenda there was little time remaining for discussion. However, important issues were aired around the balance between the scope for the use of more conditions by the Commission and the use of an incentive based structure.

The issue of state aids makes the application of incentives difficult and although more cost-effective is often ruled out in favour of the more expensive universal measures that incorporate higher levels of deadweight. In these cases, ERDF risks being deployed to bring forward sites that are either type A (development ready) or high up in Type B.

A second issue was raised by Sylvie Harburger of the Caisse des Depots in France. Her concern was that the new public-private approaches illustrated by the Polish Jessica case study tend to apportion the least viable sites to the public sector and the most viable to the private. This leads to the subdivision of development schemes into one non-viable part that is wholly funded by the public sector and a second part that is funded through an urban development fund. Already the integration principle is at risk. Perhaps there is always a down side to any solution.

Philip Stein, URBACT pole manager, commented that the current financial crisis would have the effect of leaving certain less viable sites undeveloped for the foreseeable future. Rene Beijnen emphasised the role of risk assessment in identifying those sites that do not have development opportunities – especially those that are outside the urban areas.

When asked what incentives could promote the concept of circular land uses, Ferber added that perhaps the solution was to think – especially in the so-called ‘new member states’ of temporary re-uses for the short to medium term. This might be especially relevant following the current crisis and that these sites could be encouraged by ERDF grant.

Ivan Tosics was asked by Peter Ramsden which type of integration he wanted to privilege. Was it mixed uses (in planning terms), or the fuller integration of social-economic-environmental approach? What could be the condition used within ERDF for promoting the integrated approach. Tosics replied that cross-sectoral and cross-territorial procedural tools of integrated planning have to be made compulsory to ensure the application of integrated approaches all over Europe. He went further in arguing that social and environmental actors should be involved in planning and should be given the right to formally approve the city-region strategic plans.

Alexander Ferstl commented that the functional urban area approach had been mentioned by both Dirk Engelke and Ivan Tosics but asked what happens if there is no cooperation. Engelke replied that when this had happened in Denmark the national authorities had restructured the boundaries of the country. Tosics pointed out that in both weak and strong metropolitan systems there was potential. The weaker German metropolitan regions and stronger Hungarian IUDP already exist to push for integrated planning.

This left the question of the role of cohesion policy in pushing for more integrated, strategic and city regional approaches to brownfields and good land use policies. How can ERDF be used to incentivise the most sustainable approaches and encourage politicians to respond in a positive way.

Peter Ramsden closed the workshop by drawing a contrast between the first part of the workshop which had consisted of broad pictures, grand views, and a focus on the strategic level with the practical, local projects which had tended to be single site solutions. The final (late) arrival of Jessica creates opportunities for creating integrated package of interventions. He used the Czech example to warn against imposing more conditions. The risk is that procedures will become too complex and add processing time for the end-users. In this case there is always a risk that the patient will die! We needed to find ways that the theoretical ideas could be connected in practice. To achieve this the new packages made possible under Jessica which allow intermediaries to offer a simple front office solution to the end-user while dealing with regulatory complexity in the back-office might be the solution.
3. Conclusion

A number of conclusions can be drawn from the workshop. First that approaches to managing brownfield sites will need to change if further sprawl is to be avoided. New solutions will require institutional innovations on a number of levels and reflects Einstein’s (and Geoghegan-Quinn’s) insistence on the need for new thinking to solve old problems. The old thinking was sectoral: it was determined locally and always seemed to produce negative externalities. Brownfields were created as a result of unbalanced development, which sacrificed the environment of the future to profits in the present. Insufficient regulation had failed to control emissions and pollution.

On the key themes that had set the framework for the case studies and the discussions. The European Commission should explore the potential of using cohesion policy instruments to encourage (by the best mixture of incentives and conditions) the integration of brownfield development into a comprehensive land use strategy for city regions. One option would be to say that ERDF should be targeted on brownfield sites, perhaps only allowing greenfield development in exceptional circumstances.

We needed to act now to reduce the supply of new brownfield sites in Europe. This requires a recognition by developers and planners that all new construction is essentially temporary and that we therefore need to build into new construction the plan for its second life. This means building for the long term. It would include better building techniques for new development (on both brownfield and greenfield) such as construction innovations [e.g. modular concrete which can be re-used in situ], thinking about flexible design and construction techniques and avoiding high risks that prevent second uses [e.g. ground pollution, difficult ground structures].

Empowering citizens, environmental groups and all parts of civil society is important to ensure that policy makers take account of different stakeholder perspectives when considering brownfield development. This could be reflected in a strengthening of the partnership principle in the context of city-regional planning and the ERDF.

The workshop recognised the need to encourage city-regional authorities to prioritise brownfield sites in relation to economic realities. ERDF Managing Authorities could encourage the use of the A, B, C model in their assessment of sites to be funded for development. The European Commission should promote the model and also build capacity around the financial assessment of brownfield sites so that viable sites are brought back into use for the minimum amount of grant possible. There is a track record of some regional development programmes prioritising strategic sites using a basket of criteria according to whether the site is brownfield, the linkages to disadvantaged communities and the economic impact. Such prioritisation enables a more sustainable approach to organising regeneration at the city regional level.

Explore how the ERDF can encourage through its provisions, conditions and incentives the development and redevelopment of more compact, sustainable and cohesive cities. More specifically include sprawl screening for new developments whereby if a development contributes by its location to urban sprawl it is not supported by ERDF. The converse is for Managing Authorities to encourage development in brownfield sites that are normally already within the morphological or built up urban area and therefore serve to reduce sprawl.

Ongoing work is needed to encourage transnational exchange of practice and encourage mutual learning between local and regional authorities across Europe. Much good work has been done within INTERREG, URBACT, Framework Programme and other transnational programmes but despite the documenting of methods and techniques there are many authorities that are unaware of progress in the brownfield site development.

All of these approaches to brownfields contain elements of the integrated approach to urban development in its various forms. Either by combining land uses, by bringing together different capital and revenue expenditure, by combining ERDF and ESF or by balancing economic, environmental and social development. Integrated approaches are needed
at all levels of governance in European cities – starting with communities and neighbourhoods which are close to the elected municipalities but also as parts of strategies that are coordinated and prioritised at the more strategic functional urban level of city regions.

This multi level world is complex. Urban practitioners can take heart, however, from remembering that Einstein also said ‘You can never solve a problem on the level on which it was created’. The attention of the practitioners who reported in this meeting and discussions that followed was focused very much on working at new and higher city-regional levels to find better and more integrated solutions to brownfield development, at the same time involving and empowering citizens and other actors. Using ERDF to support new strategic levels and to innovate around governance and financial solutions could be the new strategy for those arguing for more nuanced multi-level governance in which the problems are addressed by solutions at the most appropriate scale.

The current delivery of ERDF is not based on a conditionality model. The discussion raised the question of whether this approach – advocated by the Member States has resulted in wise spending decisions. It may be a case of the Member States ‘being careful of what they wish for’. Successive reforms have weakened the powers of the Commission in the operation of regional programmes which has possibly resulted in a dilution of the impact of the funds themselves. Now that Europe wants to take concerted action on matters like climate change it finds that the tools are no longer available. This might be a matter for reflection by the European Council in future negotiations.

Whatever the outcome of discussions we must guard against making the system too difficult for users of land to operate. Conditions need to be proportionate and decisions on sites – whether for planning or for grants need to be processed quickly. But this time as we search for a solution we will have to do our own thinking, as on this subject it seems that Einstein, for once, has nothing to say. Fortunately, there are many brownfield and urban practitioners in Europe whose genius can be relied upon.
4. Further resources

Case study presentations:
- Cor van Asch, Project from the Port of Rotterdam and Ruud van Raak, Programme manager, ERDF West Netherlands, presentation at [http://ec.europa.eu/regional_policy/conferences/sustainable-growth/programme_en.cfm](http://ec.europa.eu/regional_policy/conferences/sustainable-growth/programme_en.cfm)

EU KEY DOCUMENTS - REPORTS

- ERDF Article 3: Scope of the regulation. The ERDF shall contribute towards the financing of: environment, including investments connected with water supply and water and waste management; waste-water treatment and air quality; prevention, control and fight against desertification; integrated pollution prevention and control; aid to mitigate the effects of climate change; rehabilitation of the physical environment, including contaminated sites and land and brownfield redevelopment; promotion of biodiversity and nature protection, including investments in NATURA 2000 sites; aid to SMEs to promote sustainable production patterns through the introduction of cost-effective environmental management systems and the adoption and use of pollution-prevention technologies.\(^{18}\)

- Objectives of DG REGIO for re-using brownfield and waste disposal sites in relation to Cohesion Policy were outlined in the Commission communication «Cohesion Policy and Cities» COM(2006) 385 of 13/7/2006, and in the accompanying Commission staff working paper SEC(2006) 928 of 13/7/2006.\(^{19}\)

- REFC Theme 4.4 3rd October 2007 Re-using brownfield and waste disposal sites. DG Regio. This document outlines the Commission’s proposals for URBACT 2 under environmental issues. It reviews EU networks that have been funded in this field. These networks are presented below.

- The Strategy on Urban Environment (COM [2004]60 final) directly encourages brownfield regeneration.
- Strategy on Soil Protection (COM[2003]179 final), promotes brownfield regeneration on sites where the soil is contaminated.
- Strategy on Waste Prevention and Recycling (COM2003)301 final), This Directive (as it has been amended from 1975 onwards) sets up a system for the coordinated management of waste within the Union. Part of this system is the Landfill Directive of 1999, which aims to prevent or reduce the negative effects on the environment of waste being landfilled. The Directive has led to the end of co-disposal of hazardous and municipal waste and requires pre-treatment of waste prior to disposal in a landfill. This has encourage one regional development agency in the UK\(^{21}\) to treat soil contaminated by phenols by a sophisticated heat treatment process onsite rather than transporting it to landfill elsewhere. Although expensive, the solution eliminated thousands of truck journeys through local communities. EU Landfill Directive has a dual effect on brownfield sites. It can cause difficulties for public agencies and developers who wish to remediate polluted land as the act can make it more difficult to contain soil within onsite landfills. However, the act provides a financial incentive for the sustainable re-use of soil.

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\(^{21}\) Emda are regenerating the Avenue Coking Works in Chesterfield in a £100million renovation to create a nature reserve on behalf of the former owner the Department of Business (originally owner of the National Coal Board) [http://www.theavenueproject.co.uk/](http://www.theavenueproject.co.uk/)
EU ERDF FUNDED NETWORKS FOCUSING ON BROWNFIELDS

INTERREG IV C

B-TEAM: B-Team is a collaborative effort to influence existing and future policies on Brownfields through examples derived from successes and experiences of the partners. The partnership was developed to include a variety of cities and academic institutions across Europe. The objectives of B-Team clearly address the issue of improving and transferring Brownfield policies in partner regions and beyond.
http://www.interreg4c.eu/

URBACT II (current programming period)

REPAIR: Realising the potential of abandoned military sites as an integral part of sustainable urban community regeneration. Former military or heritage sites provide excellent potential to act as the catalyst for urban regeneration, many consist of historic buildings dating back over centuries and the source of rich cultural heritage. The challenge that REPAIR addresses is how to bring these into use as thriving and vibrant areas of cities.
http://urbact.eu/

INTERREG III (pre-2006)

REVIT: Within North-West Europe six partners have come together to improve regenerating their brownfield sites by sharing experience and developing new concepts and innovative approaches.
http://www.revit-nweurope.org/

REVIT produced a very useful document by Professor Nico Groenendijk 2006 Financing techniques for brownfield regeneration - a practical guide.: Universityof Twente see link at

CONVERNET network was run within INTERREG IIIB. Partners from the Baltic Sea Region and the Czech Republic exchanged knowledge about the conversion of former military sites (2003-2006).
http://www.conver.net/

TUSEC-IP: [Technique of Urban Soil Evaluation in City Regions – Implementation in Planning Procedures] funded under INTERREG developed a procedure to evaluate soils in city-regions of the Alpine Region working out strategies for its implementation in regional and municipal planning procedures. The participating countries were Austria, Germany, Switzerland, Italy and Slovenia.
http://www.tusec-ip.org

PROSIDE: [PROmoting Sustainable Inner urban DEvelopment], was funded under INTERREG III B funded by the CADSES program [Central European Adriatic Danubian South-Eastern European Space].
www.proside.info

Integra Sites: The INTERREG IIIB project [Integrated Management and Revitalisation of Contaminated Sites].
http://www.um.katowice.pl/strony/integrasites/

Interregional Partnership Platform is one of the 18 subprojects funded by the INTERREG IIC South through the Regional Framework Operation Perspective 2007-2013. It involves 4 regions [Valencia-ES, Centre-FR, Northern Great Plain-HU, Sachsen-Anhalt-DE]. One of the key topics of IPP is waste management with actions aiming at enhancing knowledge on waste treatement, identifying common issues and solutions and possible co-financing options.
www.perspective2013.info

REKULA: (Restructuring Cultural Landscapes) INTERREG IIIB project addressed rehabilitation issues in 3 former quarrying and mining regions (Upper Silesia-PL, Lusatia-Brandenburg- DE, Veneto-IT).
http://www.iba-see.de/rekula/
OTHER EU PROGRAMMES

LIFE funded projects

For a more detailed information and project descriptions, please consult the LIFE-database:
http://ec.europa.eu/environment/life/project/Projects/index.cfm

EU Research Framework Programme funded projects

LUDA: The LUDA consortium joins together six cities as well as ten research institutions from eight different European countries in a common quest of interdisciplinary research. It is a research project under the 5th Framework Programme within the «Energy, Environment and Sustainable Development» programme.
http://www.luda-project.net/

RESCUE: Regeneration of European sites in cities and urban environments (2002-2005): Aims to improve the quality of derelict land recycling and develop tools for the practical work involved in the complex processes of brownfield regeneration projects. It is a research project under the 5th Framework Programme within the «Energy, Environment and Sustainable Development» programme.
http://www.rescue-europe.com/

NICOLE: Network for Contaminated Land in Europe. Started as a FP4 funded project, is now a self supporting network since February 1999. It is the principal forum where industry, service providers and academia cooperate to develop and influence the state of the art in contaminated land management in Europe. The network has 141 members, representing industrial companies, technology developers/service providers, academics, non-profit organisations, other networks related to contaminated soil.
http://www.nicole.org/

CABERNET: (Concerted Action on Brownfield and Economic Regeneration Network). Started as FP5 project, Key Action 4, (2002-2004, built up from CLARINET) is now a self supporting European Expert Network addressing the complex multi-stakeholder issues that are raised by brownfield regeneration:

http://www.clarinet.at/

HYGEIA: [Hybrid geophysical technology for the evaluation of insidious contaminated areas]. FP5 project, «Energy, Environment and Sustainable Development» programme (2001-2004), on technologies for subsoil characterisation in an urban environment. Project website no longer available, summary at
http://ec.europa.eu/research/environment/newsanddoc/article_2665_en.htm

http://www.norisc.com

SNOWMAN ERA-NET: [Working together in research and development for sustainable land management in Europe. The FP6 ERA-NET project on cooperative research on sustainable soil pollution management, SNOWMAN, has organized a coordinated call for research projects, co-funded by organizations in the SNOWMAN partner countries (Austria, Belgium, France, Germany, Netherlands, Sweden and the United Kingdom).
http://www.snowman-era.net/index.php

**OTHER INITIATIVES**

ELSA – The European Land and Soil Alliance is an association of cities, towns and rural districts together with comparable local authorities with the aim of making an active contribution to sustainable soil use.
http://www.soil-alliance.org/en/

ACR+ Association of Cities and Regions for Recycling and Sustainable Resource Management
http://www.acrplus.org/

Common Forum on Contaminated land in the European Union is a “stakeholder network” in the development of a EU soil protection policy. The general objectives are to develop strategies for the management and treatment of contaminated sites and for land recycling with respect to “sustainable resource protection” for contaminated land and groundwater. It introduced risk based land management concepts. Member from 27 European countries.
http://www.commonforum.eu/

ICCL, International Committee on Contaminated Land (former Ad Hoc International Working Group on Contaminated Land), is an informal forum for international exchange and cooperation. Its principal purpose is to provide a forum, open to any country, in which issues and problems of contaminated land and groundwater can be discussed and information freely exchanged to the benefit of all participants.
http://www.iccl.ch/index.html

EUGRIS is a web portal offering information and services on topics related to soil and water. EUGRIS operates as a community of collaborating projects, people and organisations who co-operate to supply information for the benefit of everyone and also to promote themselves and disseminate their work. EUGRIS began as a project supported by the European Commission under the Fifth Framework Programme and other supporters.
http://www.eugris.info/

The network of environmental inspection officials of the Member States
(http://ec.europa.eu/environment/impel/index.htm)

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**OTHER RELEVANT EU INSTITUTIONS/NETWORKS**

The European Environment Agency: The EEA aims to support sustainable development and to help achieve significant and measurable improvement in Europe’s environment through the provision of timely, targeted, relevant and reliable information to policy-making agents and the public.
http://www.eea.europa.eu/

The EEA has a European Topic Centre on Resources & Waste
http://waste.eionet.europa.eu/