



environmental  
technology



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# Maximising the value-proposition for soft re-use of brownfields

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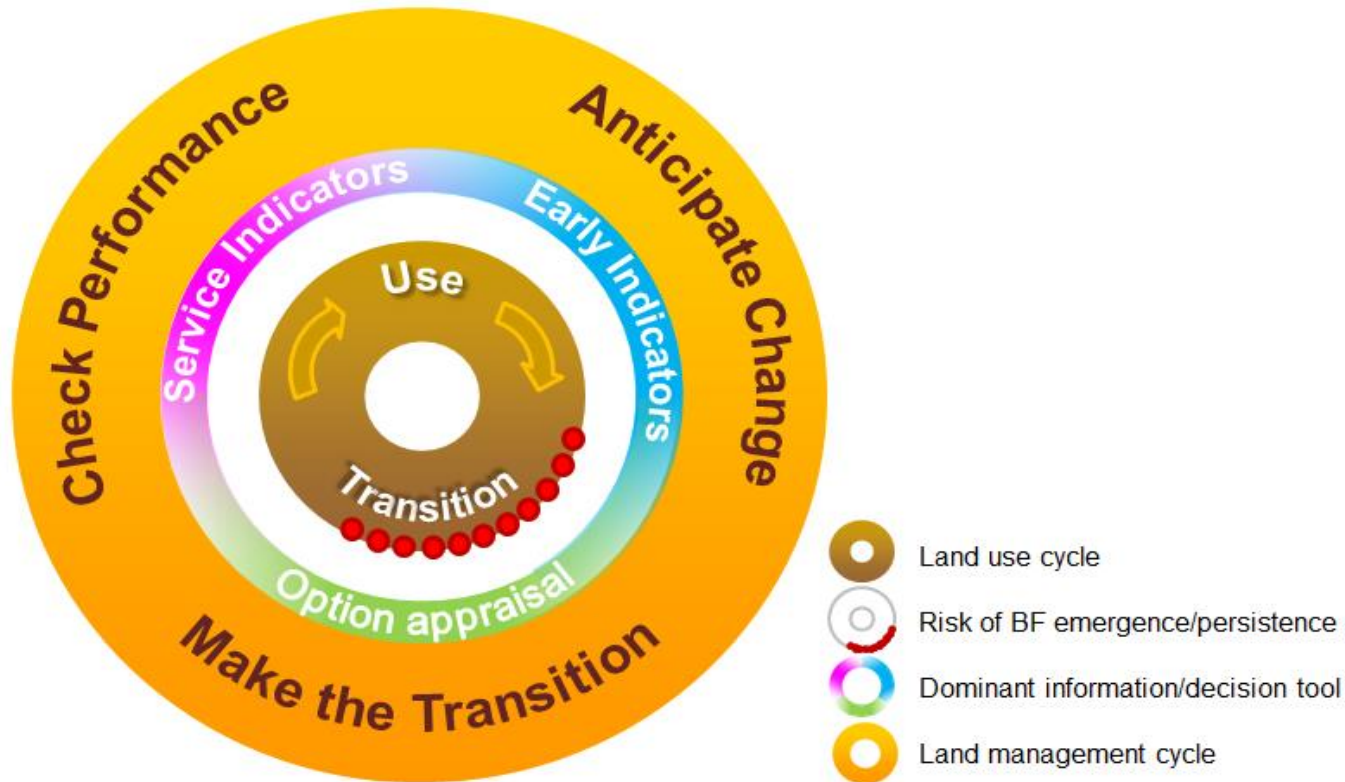
- The HOMBRE project
- What is soft re-use
- What services and value can soft re-use provide
- Brownfield opportunity matrix
  - A tool for optimising value from soft re-use
- Concluding thoughts



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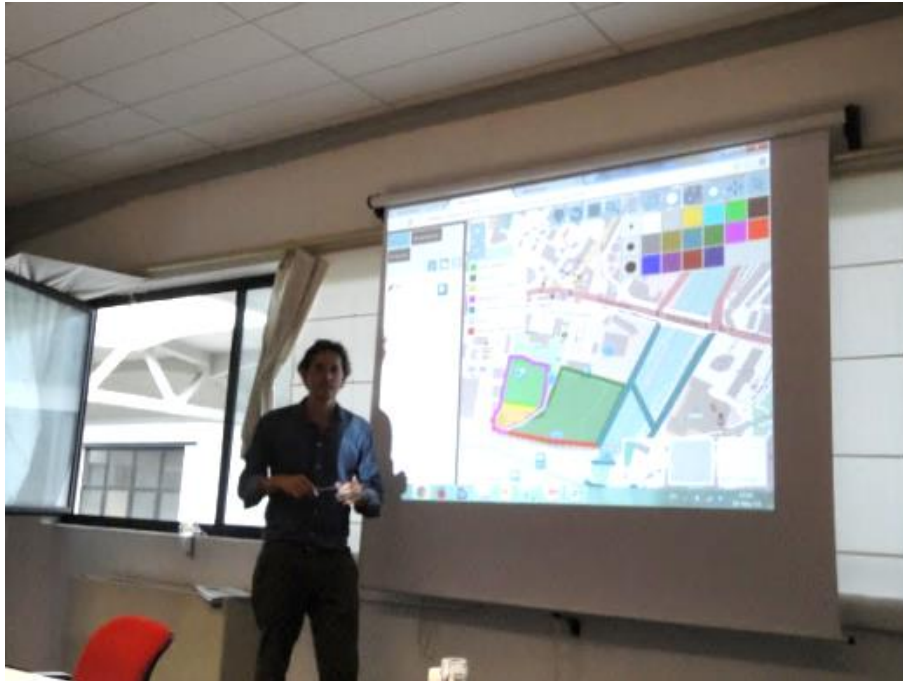
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# The HOMBRE Project - A holistic approach





# Brownfield Navigator – a portfolio of tools



This presentation will focus  
on one these tools

# What is soft re-use

- “Hard Re-Use”



Building or infrastructure

- “Soft-Re-Use”



Unsealed soil



Often  
combined



# Services from soft re-use







- Site value uplift / value uplift of surroundings / framing built development
- Renewable energy generation
  - Biomass based
  - Geothermal
  - Wind
  - Solar
- Renewable material generation
- Greenhouse gas mitigation (carbon offset revenue?)
- Synergies with waste processing and re-use, leachate management
- Shielding / sound-scaping
- Flood management
- Amenity and leisure
- Urban climate management (such as mitigation of urban heat island effect)
- Air quality management
- Habitat and conservation
- Improved soil and water resources
- Improved health and well-being
- Opportunities for education
- Community involvement
- *Ecological system services*



# Value



€	Revenue Generation Opportunity
	Natural Capital
	Cultural Capital
	Economic Capital - tangibles
	Economic Capital - intangibles

# Delivery = Interventions

- Gentle Remediation Options
- Other Remediation Options
- Soil Management Activities
- Water Management Activities
- Implementing Green Infrastructure
- Renewables
- Sustainable Land Planning and Development
  - (e.g. development of Amenities)



# Brownfield opportunity matrix

- The HOMBRE Brownfield Opportunity Matrix plots Soft Re-use INTERVENTIONS against SERVICES that an Intervention may provide in order to demonstrate the VALUE of applying the Interventions either on there own, or in synergy with other interventions.
- The goal is to encourage redevelopment of Brownfield land so that it re-enters the land-use cycle.

Soft re-use	Service 1	Service 2
Intervention 1		
Intervention 2		

- HOMBRE was funded by FP7, [www.zerobrownfields.eu](http://www.zerobrownfields.eu)



**SERVICE**

Examples.....

**INTERVENTION**

	Intervention <b>strongly contributes</b> to delivery of this service
	Intervention <b>contributes some and/ or indirect benefits</b> in delivering this service
	Intervention <b>may contribute or be detrimental</b> to delivery of service depending on site specific circumstances including management/design
	<b>No influence</b> - <u><i>potential to apply complimentary intervention with further services and added value as output</i></u>
	Intervention <b>may be detrimental</b> to delivery of this service if not managed/designed appropriately
!	In the event a brownfield site/part of a brownfield site is classified by a regulator as contaminated - appropriate risk mitigation must form part of the redevelopment strategy for the brownfield site
^	Negative influence/s could be negated with appropriate management/design

# Simpler and detailed versions

## Simple

Brownfields Opportunity Matrix		Services							
A high level decision support tool designed to demonstrate the value and opportunities for the redevelopment of brownfields for a city/region		Full Mitigation of Remediation Costs and Risks	Remediation	Water Resource Treatment	Provision of Brownfield Infrastructure	Mitigation of Human Health Risks through Remediation	Creation of New Jobs	Creation of New Jobs through Remediation	Other Services
Interventions	Urban Renewal								
	Urban Renewal - Office								
	Urban Renewal - Industrial								
	Urban Renewal - Retail								
	Urban Renewal - Residential								
	Urban Renewal - Community								
	Urban Renewal - Education								
	Urban Renewal - Healthcare								
	Urban Renewal - Cultural								
	Urban Renewal - Sports								
	Urban Renewal - Energy								
	Urban Renewal - Other								
	Urban Renewal - Mixed Use								
	Urban Renewal - Green								
	Urban Renewal - Innovation								

## Detailed

Brownfield Land Valorization Opportunity Matrix		Service level				Services																																		
Level 1		Level 2		Risk Mitigation of Remediation Costs and Risks	Water Resource Treatment	Provision of Brownfield Infrastructure	Mitigation of Human Health Risks through Remediation	Creation of New Jobs	Creation of New Jobs through Remediation	Other Services	Value Economic Benefits																													
Interventions	Level 1	Level 2	Examples		Risk Mitigation of Remediation Costs and Risks	Water Resource Treatment	Provision of Brownfield Infrastructure	Mitigation of Human Health Risks through Remediation	Creation of New Jobs	Creation of New Jobs through Remediation	Other Services	Value Economic Benefits																												
			Examples	Examples								Job Creation	Job Creation	Other Services	Activity	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value														
Interventions	Level 1	Level 2	Examples	Examples	Risk Mitigation of Remediation Costs and Risks	Water Resource Treatment	Provision of Brownfield Infrastructure	Mitigation of Human Health Risks through Remediation	Creation of New Jobs	Creation of New Jobs through Remediation	Other Services	Job Creation	Job Creation	Job Creation	Job Creation	Job Creation	Job Creation	Job Creation	Job Creation	Job Creation	Job Creation	Job Creation	Job Creation	Job Creation	Job Creation	Job Creation	Job Creation	Job Creation	Job Creation											
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# Simple format



Brownfields Opportunity Matrix		Risk Mitigation of Contaminated Land and Groundwater		Soil Improvement
		Biosphere (including human health)	Water Resources (hydrosphere)	Fertility
Gentle Remediation Options		Phyto-Remediation		
		Amendment Addition		
		Natural Attenuation		

*A high level decision support tool designed to demonstrate the value and opportunities for redevelopment of a brownfield site for a soft re-use*

Mouse over the top half of the box to get a description of the example

Click on the bottom half of the box to go to the example



# Informational format

Brownfields Opportunity Matrix		Service level	Services																																																
Intervention level	Level 1	Level 1	Provision of Green Infrastructure				Mitigation of Human Induced Climate Change (global)																																												
		Level 2	Enhancing Ecosystem Services		Enhancing Local Environment		Renewable Energy Generation		Renewable material generation		Greenhouse Gas Mitigation		Amenity				Economic Assets																																		
Examples		Protection of habitat and biodiversity (where existing and for developing new habitat and increasing biodiversity)		Improve urban soundscapes and air quality		Limiting visual intrusion by landscaping (buildings, transport)		Urban Climate Management (such as mitigation of urban heat island)		Energy for on-site use		Energy for off-site use		Supply to an integrated energy mix		Biofeedstocks (for biofuel/gas/plastics)		Re-use of organics		Reduced GHG Emissions		Carbon Sequestration		Open Space		Leisure		Education		Improved health and wellbeing		Access (footpaths, cycle routes)		Tourism		Community Centre		Views and viewpoints		Framing Built Developments		Grazing		Job Generation		Land value recovery over time		Area value uplift		Interim land management	
Interventions	Renewables	<u>Energy Generation</u> Geothermal/Ground Source Biomass Energy Creation (e.g. Wood, biofuel, Biogas etc) Photo-voltaic/solar panels for power generation and heating water Wind turbines																																																	
	Sustainable Land Planning and Development	<u>Development of Amenities</u> Landscape planning and development Leisure design, development and management Educational Facilities Facilities, fencing, paths, paving and other																																																	

High Level Operating Window (HLOW)

Service Significance Information

ISICs and Opportunity Windows



# When



- Simple
  - Brain storming, scope, range of opportunities, illustrating, broad discussions with different people
- Detailed / informational
  - Validating, initial feasibility, returning feedback, finding further information, explaining



# Concluding thoughts

- The “BOM” is not a GIS system
  - And of course solutions will be integrated across areas
  - But the BOM works with the “Brownfield Navigator” which supports geographical viewpoints
- The BOM is a simple concept
  - But it has been an enormous amount of work
  - Links can be ephemeral
  - Case studies, examples and guidance develops...
- This is an output from a European project
  - But people like local information and examples where possible
- Customisation
  - Very open to collaboration to customise versions for regions / countries
- It is not rocket science, it’s pocket science!



# Links

- HOMBRE project information: [www.zerobrownfields.eu](http://www.zerobrownfields.eu)
- Brownfield Navigator: <http://bfn.deltares.nl>
- All public outputs of the EU funded HOMBRE project area available from: <http://www.zerobrownfields.eu/content.aspx?wp=2&p=233>
- Decision support and case studies on gentle remediation can be found at: <http://www.greenland-project.eu>