Strategic revitalisation of Megasites

Innovative soil reuse and adaptive land transformation

The sustainable transformation of contaminated and degraded land increasingly requires integrated approaches that align remediation, soil management, risk assessment, and land-use planning with long-term societal, environmental, and economic objectives. Large and complex sites are being repurposed under diverse end-use scenarios, ranging from reindustrialisation and critical infrastructure development to urban regeneration, megaevents, data-intensive facilities, and managed re-naturalisation. These transformations take place within a rapidly evolving regulatory landscape, growing resource constraints, and heightened expectations for environmental performance, circularity, and resilience.

Naples, our host city, with the redevelopment of the former industrial complex of Bagnoli into a new urban district and park, is living and embodies this evolution, further spun by the next 38th America's Cup, which will find base on its remediated shoreline and its beautiful gulf.

The programme is structured around four interconnected themes. This NICOLE Spring Workshop will explore how **end-use objectives, data-driven decision making, technological innovation, and emerging soil policy frameworks** can be more effectively integrated to support risk-based, sustainable site transformation.

1. **How end use defines redevelopment strategies (megaevents, re-industrialisation, data centres, urban and residential redevelopment, managed re-naturalisation).**

This session explores how intended end uses can act as a catalyst and should, from the beginning, shape the strategies for risk assessment, remediation, soil management, land planning, new building siting as well as design and transformation of complex sites into functional, resilient, and compliant assets.

Contributions are encouraged that address, among others, the following topics:

- End use as a structural motivation of site transformation, examining how intended future uses shape planning approaches, governance, investment choices, project timelines, and conflict dynamics;
- End-use-oriented risk assessment and remediation, focusing on how future land uses inform risk-assessment, cleanup objectives, and remediation design from the earliest planning stages;
- Innovative and sustainable approaches to on-site contaminated soil management, circular reuse and valorisation in relation to different functional and performance requirements of its end use;
- Infrastructure–end-use interdependencies, analysing how constraints and opportunities of existing and new infrastructure might inform the feasibility of alternative end-use scenarios (e.g., accessibility and transportation for megaevents, environmental and social impact for re-industrialisation and urban redevelopment, high energy and water loads for data centres, ecological and soil-health objectives for renaturalisation);
- Case studies showcasing scalable solutions, environmental and social co-benefits, long-term stewardship models, and demonstrated cost–benefit performance, with an emphasis on transferability and replicability.

2. Data-driven decision-making for enabling strategic land revitalisation.

This session focuses on the use of data-driven approaches to support strategic land revitalisation at large, complex contaminated sites. These sites often feature heterogeneous contamination, multiple source zones, and evolving land-use demands, making decision-making challenging. The session highlights how integrated datasets, modelling, and decision-support tools can guide remediation planning, soil management, and safe reuse of land at scale. Emphasis is placed on strategies that enable risk-informed, cost-effective, and sustainable redevelopment, while aligning with circular economy principles and long-term site stewardship.

Contributions are invited on approaches including, but not limited to:

- Data-driven decision-support tools for large-site risk assessment, remediation, optimisation, soil reuse and revitalisation outcomes including spatial modelling, predictive analytics, and digital twins.
- Integration of multi-source data to inform remediation strategy and prioritisation.
- Scenario analysis and adaptive management for complex sites lacking certainty, supporting phased or long-term remediation planning.
- Case studies demonstrating successful data-driven land revitalisation, including cost–benefit analysis, scalability, and regulatory compliance considerations.

3. Technology innovation in remediation and soil health for soil reuse.

This session invites abstracts that highlight advances in technologies, methodologies, and decision-support tools that enable contaminated or degraded land to be remediated, improved, and reused in alignment with circular economy principles.

Contributions are invited that address innovative remediation and management approaches, including:

- Novel in situ technologies that prioritise mass recovery and reuse over disposal, utilising integrated treatments to enable functional recovery without the need for off-site transport.
- Strategies for sediment management to address the challenges of dredging, dewatering, treatment and ecological protection of aquatic-terrestrial interfaces.
- Approaches for restoring, enhancing, and demonstrating soil health during and following remediation, including monitoring and verification of long-term functionality.
- Risk-based and performance-based remediation and reuse strategies for managing complex contaminant mixtures, addressing both legacy and emerging contaminants.
- Regulatory readiness and compliance, including approaches to uncertainty management and decision-making that align with current and forthcoming soil, waste, and chemical legislation.
- Considerations of technology readiness, scalability, and cost–benefit performance, supported where possible by case studies demonstrating successful reuse.

4. Soil Monitoring Law Supporting Risk-Based Site Transformation.

The sustainable restoration and transformation of contaminated sites require robust, science-based frameworks for soil monitoring, risk assessment, and decision-making. In this context, the EU Soil Monitoring and Resilience Directive (the "Soil Monitoring Law") represents a major regulatory milestone, establishing for the first time an EU harmonised approach to soil health assessment. It provides a methodological framework and EU-comparable data that define soil health through measurable physical, chemical, and biological parameters, enabling assessment of soil status, ecosystem service delivery, and informed planning for sustainable soil management. The Soil Monitoring Law also encourages the wide adoption of a risk-based approach for identifying, investigating and managing contaminated sites.

Contributors are welcome to present case studies addressing, but not limited to, the following topics:

- How monitoring can support risk-based prioritisation of intervention, improve transparency and comparability across sites, and enable adaptive and sustainable reuse scenarios
- The future role of the Soil Monitoring Law in identifying and characterising soils, support remediation strategies and site-specific risk management
- Risk-based approaches to site reconversion, soil reuse, and land use planning considering evolving EU soil regulatory tools, and legislation.
- Use of existing and new methodologies to restore soil ecosystem services and optimise effort in efficient land management, data collection and interpretation

Submission Guidelines and expectations of the organising committee:

Authors are required to submit a ***one-page abstract*** of what they would like to present, together with an outline of the structure of the presentation and a ***short biography,*** as well as an indication of preference towards oral presentation or poster, and which session they address from 1 to 4 above.

Abstracts that incorporate case studies, or draw on relevant practical examples are encouraged. Abstracts shall be well-written in English, and clearly and concisely outline the information being proposed for presentation. When preparing your abstract, clearly describe the problem or gap your work addresses and highlight what is new or unique about your approach. Summarise your methods and key results, emphasising outcomes that demonstrate the innovation. Share the lessons learned, including the challenges that were overcome or unexpected insights, and explain the potential impact of your work. Keep your writing concise, focused on the workshop themes, and accessible, avoiding unnecessary jargon. Abstracts with an advertising or marketing focus will not be accepted.

The Organising Committee will carefully review all submitted abstracts, determine their relevance, compare it with other proposed presentations, and, if accepted for the program, assign it to an appropriate format and session. Session organisation will be finalised upon final abstract selections. In this process, some valuable abstracts may not be accepted for an oral presentation: in this case, authors may be invited to the poster session, which includes a short speech.

The selected abstracts will be published on the NICOLE Portal after the workshop. By submitting an abstract, you agree to the publication with your name.

Deadlines:

Abstracts should be sent by e-mail to Chayenne van Dijk by **Friday the 6th of March 2026**. Afterwards the organising committee will evaluate the abstracts. The authors of the abstracts will be notified if they have been selected by **the 27th of March 2026**.

Location:
The workshop will be organised at the Porta del Parco (Park Gate) in Bagnoli.
The address is: Via Diocleziano, 341, 80124 Napoli, Italy.

Organisation committee members:
Jean Pierre Davit – WSP – Workshop Chair
Ken Scally – Normec – Workshop Vice-Chair

Alessandro Fusari – Jacobs
Anna Espinoza – LIST
Cosimo Masini - DND Biotech
Daniele Susanni - RAMBOLL
Edoardo Masut – ERM
Francesca Faraon - Mérieux NutriSciences
Frederic Coulon – Cranfield University
Horst Herzog - Infraserv
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