nôva TECH
Stormwater | Science & Management
12th International conference
2026

SYNTHESIS

Organized by the Graie, the OTHU and the Metropolis of Lyon, the Novatech international conference is dedicated to integrated and sustainable stormwater management and to the adaptation of regions to climate and environmental challenges.

The 12th edition of Novatech was held from June 29 to July 3, 2026 at UCLy in Lyon.

Highlights of this edition

- **145 oral** presentations and **95 posters**
- 1 **opening plenary** conference session with Rhys COLEMAN, Peter BACH and Kotchakorn VORAAKHOM.
- **5 themes:** Source control measures (Understanding & acting, Monitoring and modeling) - Governance & development - Catchment perspective - Knowledge transfer.
- **3 poster sessions**: a different program each day, fostering fruitful exchanges between speakers and delegates.
- **Workshops** on Monday to explore specific topics in depth - a dedicated time for communities to come together
- **4 technical tours and 2 serious games** on Friday to discover integrated stormwater management in action across the Metropolis of Lyon.

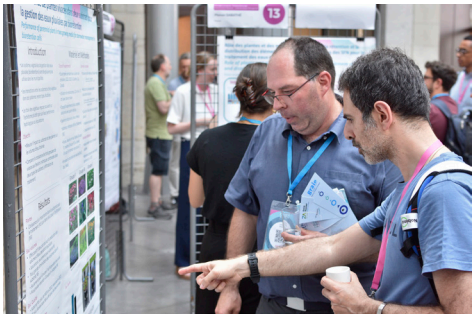
650 participants from more than 35 countries

The major challenges discussed at Novatech 2026

- **Moving to scale.** Mainstreaming nature-based solutions.
- Thinking of **Water-Soil-Vegetation as one system**. Continuing to understand and monitor in situ how this triptych functions, as it is highly dependent on the local context.
- **Designing for future climates** and maintaining performance over time.
- **Making data a common good**, shared internationally and enriched by the diversity of climatic contexts, but also fed by failure, by sharing the difficulties encountered.
- Developing **multicriteria indicators** beyond hydrology, to highlight the multifunctionality of stormwater facilities and territorial strategies.
- **Getting tools and human expertise to work together**, in particular within multicriteria planning approaches.
- **Breaking down silos and strengthening cooperation among all stakeholders**: between scientists and operational practitioners, between public services, between urban development actors through a cross-disciplinary approach, and between public and private actors - and, last but not least, mobilizing citizens and users.







The lasting tranformation of regions through integrated stormwater management

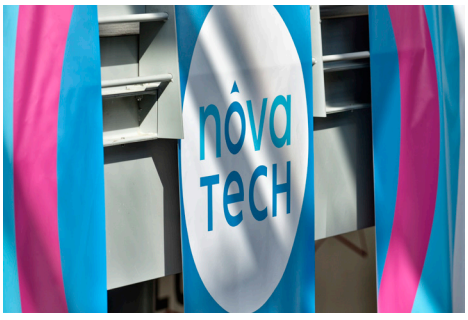
What did we learn collectively at Novatech?

More than thirty years after the first edition of Novatech, integrated stormwater management has entered a new phase of relative maturity. Scientific knowledge is extensive, feedback from experience is multiplying on every continent, and digital decision-support tools are becoming increasingly refined. Territorial strategies and nature-based solutions demonstrate their ability to simultaneously address flood risk, water quality, climate adaptation, biodiversity, urban development and quality-of-life challenges.

The exchanges often showed that the challenges are no longer primarily technical and scientific. They now rather concern our capacity to plan, decide, maintain, govern and roll out these new practices at a large scale. Questions are also focusing on the long term, taking into account the future evolution of our climate and our societies.

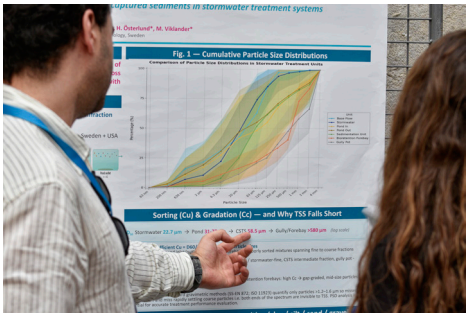
The session chairs of this 2026 edition were invited to formalise the highlights and perspectives emerging from each session. **Drawing on these collective analyses, we highlight here the main lessons learned** and the key upcoming challenges we will take away from Novatech 2026, **to make integrated stormwater management an ordinary component of city-building.**











1 - Transforming regions and breaking down silos

Integrating water across public policies, urban planning and development projects.

1. Stormwater management is becoming a genuine territorial project

The papers show that **stormwater management is no longer simply a matter of urban hydrology. It is becoming a genuine lever for transforming regions**, mobilising urban planning, landscape, soils, biodiversity, climate adaptation, health, uses and quality of life.

Feedback from experience demonstrates that this transformation rests primarily on a sustainable political strategy, cross-cutting governance within public policies, and continuous stakeholder mobilisation to break down silos between approaches.

Many exemplary development projects were shared, ranging in scale from the condominium to the joint development zone (ZAC), including town gateways and urban parks. They demonstrate that, driven by committed stakeholders, it is possible to involve all stakeholders from the very earliest stages, for successful projects with multiple motivations often present from the outset. These speakers also emphasise the training efforts and demonstration through example needed to mainstream these source control stormwater management approaches in all projects.

A few papers addressed rainwater harvesting. Looking at a territorial project, it now seems essential to integrate the possible uses of rainwater, and more broadly of non-conventional water, into the sustainable territorial management of water resources, with a systemic vision.

2. Source control stormwater solutions are entering the realm of infrastructure

Nature-based solutions for source control stormwater management are no longer seen as experiments, but as **fully-fledged urban infrastructure**. Mobilising the Water-Soil-Vegetation triptych is a real asset for projects and regions, and it helps shape the city. Water and vegetation are no longer hidden; they have become visible elements with a recognised place and function. **The multifunctionality of developments is an essential criterion**: they serve many objectives beyond water management (flooding, quality and frugality), such as urban cooling, biodiversity and improved living environments. Meeting these objectives is probably one of the keys to the success of this strategy, but it calls for the development of objective, quantifiable indicators.

Finally, the results achieved after ten or twenty years of deployment in some regions prove the value of disconnection and source control strategies for reducing flooding and wet-weather discharges at the scale of the sewer system.

3. The main challenge is now large-scale implementation

Technical knowledge is now widely available. The obstacles identified to deploying these solutions are mainly organisational, cultural and economic.

From an organisational standpoint, original approaches and dynamics are being deployed or experimented, such as «inter-service circles», «water facilitators» and more collaborative working methods, whose beneficial effects are already perceptible.

Many papers conclude on the need for funding or financial incentives to develop these solutions. The economic interest at the individual household level is even debated. But given the avoided costs, it would be worth involving insurers, to share their risk perspective on stormwater management.

Many experiences highlight the value of communicating around «rainwater», a term that restores **water's resource dimension** in people's minds. In the defining context of climate change, a cultural shift in our relationship with water is essential. One of the keys to achieving this probably lies in how rainwater management is perceived: it should become a logical, commonplace, accessible approach that is everyone's responsibility.

Finally, experiences sometimes question the right balance to be struck between regulation and incentives.

2 – Planning and deciding

Developing and facilitating the uptake of modelling and decision-support tools suited to territorial challenges and climate change

1. Modelling is becoming a genuine decision-support tool

Solutions must be adapted to the local context. Indeed, the choice and effectiveness of solutions strongly depend on local soil characteristics, land availability, uses, costs and the objectives pursued.

The work presented shows a significant evolution of digital tools and modelling. These tools and methods are no longer used only to understand, but also to inform public decisions, prioritise investments and support territorial planning. They progressively make it possible to identify priority areas, compare different development strategies and involve stakeholders in decision-making, in a context of climate change and growing uncertainty.

2. Assessment tools are moving towards a multicriteria approach

The papers show that decision-support tools now incorporate hydrological performance and water quality, but also environmental benefits, life-cycle costs, ecosystem services and users' expectations and needs.

The challenge is now less about developing new tools than about continuing to collect field data to feed them. It is also about strengthening the skills needed to use them and to articulate them with local authorities' operational tools.

3. Artificial intelligence opens up new prospects but also raises questions

Artificial intelligence appears in several papers, in particular for real-time forecasting, hybrid models, real-time network management and decision support. The discussions show a **cautious approach**, however. The benefits are real, but several session chairs stress the need to better manage uncertainties, identify unintended effects, keep models interpretable and transparent, and strengthen managers' trust.

3 - Refining our understanding of processes

Deepening knowledge of the mechanisms governing how nature-based solutions function, particularly with regard to emerging pollutants and infiltration.

1. The Water-Soil-Vegetation triptych appears essential, but how it functions is highly context-dependent

All sessions devoted to the performance of facilities converge towards the same conclusion: **this performance results from complex interactions between water, soil, materials, vegetation, microorganisms and climate**, and is highly context-dependent.

Research highlights in particular the structuring role of soil in infiltration and treatment processes; the influence of plant characteristics on evapotranspiration, urban cooling and the resilience of facilities; and the importance of local conditions (climate, facility size relative to the catchment, type of vegetation, soil permeability).

Many studies propose new substrates, adsorbent materials or innovative configurations designed to improve hydraulic or treatment performance. It is important not to deprive ourselves of new solutions and configurations, while ensuring that optimisation does not come at the expense of operational simplicity and long-term robustness.

This diversity argues for approaches based on adaptation to the context rather than on the search for a single optimal solution.

2. Water quality and emerging contaminants remain a scientific priority

A significant share of the papers deal with the treatment performance of facilities. Research highlights the ability of biofilters and infiltration facilities to retain many contaminants, but also possible release phenomena depending on materials or soils, as well as the emergence of new contaminants of concern such as PFAS and microplastics. Thus, **depending on their operating conditions, facilities can simultaneously be pollution sinks and pollution sources.**

3. Infiltration must be considered in all its dimensions

Research confirms that many rainfall events only replenish surface horizons, thereby helping to rehydrate soils without reaching the water table, while certain configurations can favour deeper transfers. The same applies to contaminant transfer.

Research must continue to better characterise the conditions leading to effective aquifer recharge and to incorporate this knowledge into facility design.

4. Evapotranspiration is becoming a key performance indicator

Several papers highlight the **progress made in quantifying evapotranspiration** thanks to complementary approaches: direct measurements, calculation methods, remote sensing or satellite imagery. This work confirms that evapotranspiration is a major process, both for the quantitative management of stormwater and for urban thermal comfort. The challenge is now to move from local experiments to assessments at the neighbourhood or city scale.

4 - Ensuring long-term performance

Ensuring the long-term monitoring, maintenance and asset management of facilities.

1. Facility performance changes over time

The papers show that **the hydraulic, environmental and thermal performance of facilities is never set in stone**. It evolves under the effect of vegetation growth, sediment accumulation, material ageing, climatic conditions and usage and maintenance practices.

Long-term monitoring reveals significant variability, including between similarly designed facilities, and calls for greater integration of uncertainties and facility evolution trajectories into their design and assessment.

Different methods and technologies enabling this monitoring are being developed: low-cost sensors, passive samplers, the use of drones and satellite imagery, etc. These technologies now make more frequent and spatially distributed monitoring of hydrological performance, water quality and vegetation condition possible, although precautions are still needed regarding interpretation and data quality.

2. Maintenance appears to be the main factor in the sustainability of performance

All sessions devoted to maintenance converge towards the same observation: **many facilities see their performance decline for lack of appropriate maintenance.** Depending on the development context, nature-based solutions can suffer from a lack of maintenance.

Vegetation is becoming a genuine object of management. Its evolution directly conditions the hydraulic performance, evapotranspiration, urban cooling and social acceptability of facilities.

Studies show that degradation mechanisms are now relatively well identified, but their kinetics remain difficult to predict given the strong influence of the local context. Initial models and tools are being developed to anticipate failures and interventions: maintenance must be considered as a fully-fledged component of project design.

Beyond technical aspects, the discussions highlight the importance of training managers, organising services, sharing information and managing the assets of all stormwater management solutions (whether vegetated or not).

3. Performance must be assessed and maintained over the entire life cycle

Digital modelling tools make it possible to revisit traditional design methods, which are reaching their limits in the face of a changing climate. It is no longer a matter of limiting ourselves to a design storm, but of **assessing the performance of facilities and their resilience under different climatic conditions, using long rainfall time series and real events**, with regard to quantitative objectives (in particular extreme events) but also qualitative ones (with issues around long-duration rainfall).

Performance is no longer an initial characteristic of a facility, but a quality that is built and maintained throughout its life cycle. The aim is to build a **continuum between the design, operation, monitoring and asset management** of infrastructure, with appropriate shared indicators. It is not only about assessing how a development will cope with different rainfall patterns, but also how it will sustain itself under different climatic conditions (particularly the plants).

5 - Spreading, sharing and supporting change

Ensuring knowledge transfer to lastingly transform practices.

1. Changing practices is now the main challenge

The discussions confirm that the technical barriers to changing practices are gradually being lifted. Knowledge, methods and feedback are now sufficiently plentiful to support the transformation of regions.

The challenge is now their adoption by all stakeholders: local authorities, engineering consultancies, developers, companies, managers, researchers, teachers and citizens.

The transition rests as much on skills, organisations and professional cultures as on technical innovation. It calls for evolving training, support and knowledge dissemination schemes, in order to accelerate the mainstreaming of good practices.

2. Communities of practice are becoming engines of innovation

The papers show the value of international networks, interdisciplinary workshops, scientific communities and research programmes rooted in the territories in promoting the sharing of experience. The examples presented - European workshops for young researchers, collaborative projects or international databases - illustrate the **richness of exchanges between scientists and practitioners, between disciplines, generations and territories**. They also underline the importance of preserving these exchange spaces over time.

3. Sharing and standardising data

Data is becoming a common good for evolving knowledge and practices.

Several sessions emphasise the growing importance of data, whether long meteorological time series, open databases, alternative data (fire station records, social media, field observations), common reference frameworks, knowledge platforms or pooled feedback. These approaches make it easier to compare results across territories, climates and types of development, while accelerating the production of knowledge.

Speakers stress **the need for accessible, standardised and reusable data in line with FAIR principles**, with a view to developing shared databases, harmonising methods and promoting the dissemination of open-source digital tools.

4. Training and raising awareness among all audiences

Knowledge dissemination no longer concerns specialists only. The initiatives presented are aimed at professionals of all levels of expertise, elected officials, students, citizens and young audiences. Technical guides, training platforms, exhibitions, educational games, «rain ambassadors» or digital tools reflect a diversification of awareness-raising methods.

Developing educational schemes adapted to the diversity of audiences, changing the way we look at rain and strengthening water culture in society appear as essential conditions for transforming practices.

5. Standardising without homogenising

Several papers show that guides, reference frameworks or quality charters are now important levers for moving from demonstration projects to large-scale implementation. Standardisation helps secure practices, improve project quality, facilitate maintenance and disseminate innovations more quickly. This harmonisation must nevertheless retain the ability to adapt to local contexts.

6. Building bridges between science, action and society

Presentations often stress that **the most significant progress arises from collaborations between researchers, local authorities, managers, companies and citizens.**

The **dialogue between science and practice** is becoming an essential component of research itself, producing knowledge that territories can directly mobilise.

The task today is to develop **co-construction approaches** combining scientific production, operational experimentation and stakeholder capacity building, in order to accelerate the transition towards integrated and sustainable stormwater management.

This collaborative dynamic is one of the great strengths of the «Novatech community» and of Graie for more than thirty years.

Conclusions

After more than forty years of research in urban hydrology, the 12th edition of Novatech confirms that integrated stormwater management is no longer an experimental innovation. Scientific knowledge is sound, feedback from experience is multiplying and tools are diversifying. **The major challenge is no longer to demonstrate the value of nature-based solutions, but to turn them into common practice and create the conditions for their widespread adoption.**

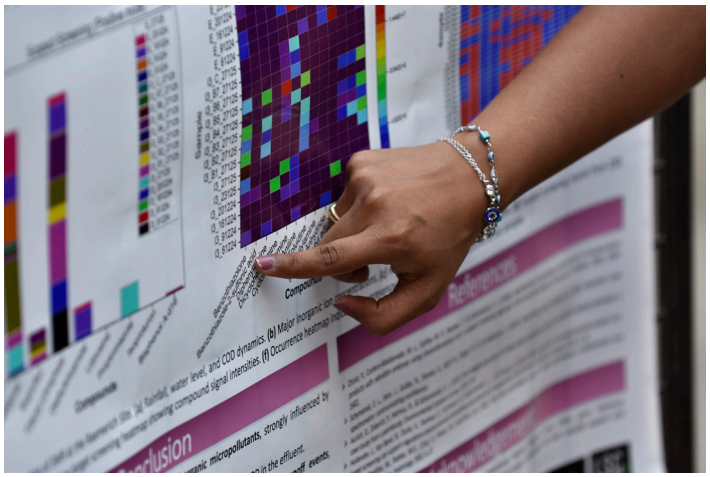
Research today aims to gain a fine-grained understanding of the processes that determine the performance of nature-based solutions, in order to design facilities that are more effective, more robust and better suited to the diversity of urban and climatic contexts. It also develops tools to move to scale: assessing the effectiveness of source control strategies at the territorial level, in a context of climate change and high uncertainty.

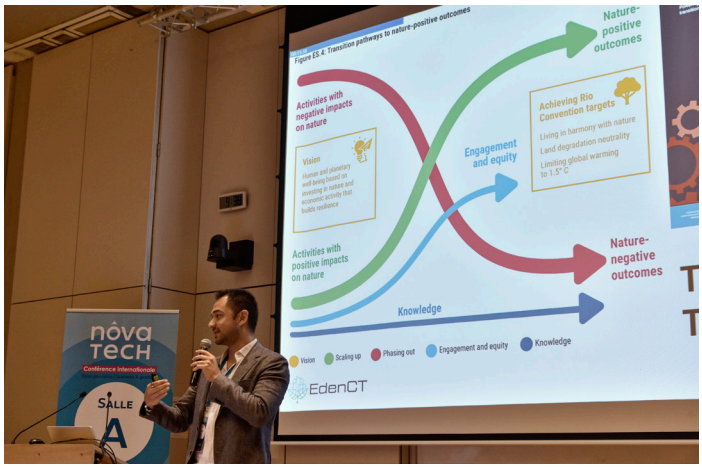
Large-scale deployment of these solutions calls for **new forms of governance** and their integration into public policies, ownership and capacity building among all stakeholders, better articulation between research and practice, **an integrated vision linking water, soil, vegetation, urban development and uses,** and management that is sustainable and adapted over time.

The success of this transition now depends on our collective ability to share knowledge and tools, train stakeholders, structure communities of practice and build a genuine common culture of integrated stormwater management. It also depends on our ability to anticipate, in order to build for the long term.


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References


Nature-positive outcomes
Activities with negative impacts on nature
Engagement and equity
Achieving Rio Convention targets
Living in harmony with nature
Land degradation neutrality
Limiting global warming to 1.5°C
Activities with positive impacts on nature
Nature-negative outcomes
Knowledge
Vision
Scaling up
Phasing out
Engagement and equity
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Trophées Thierry Maytraud

Through the Thierry Maytraud Awards, the Novatech international conference celebrates transdisciplinary initiatives led by professionals who, without being stormwater specialists, know how to integrate it in a relevant and innovative way into their projects.

For this 12th edition of Novatech, **13 projects were selected** by a jury bringing together representatives of the various professions involved. Project leaders were invited to present their project orally during the conference, in front of the jury. Choosing between the finalist projects was no small task: the quality of these exemplary projects made the jury's deliberations particularly tricky!

Many thanks to the jury members for their commitment!

- **Elisabeth SIBEUD**, Métropole de Lyon
- **Cyrille GIREL**, Grand Chambéry
- **Véronique DUFOUR**, Ville & Aménagement Durable
- **Anne-Laure HERAUD**, Suez
- **Damien SAULNIER**, UrbaLyon
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- **Fabien ABAD**, Rhône Méditerranée Corse Water Agency
- **Sylvain MOREIRA**, Cerema
- **Frédéric DELLINGER**, Eranthis
- **Tim FLETCHER,** University of Melbourne
- **Elodie BRELOT**, Graie

The 2026 winners of the Thierry Maytraud Awards



Territorial strategy category

The «Eau en ville» (Water in the City) approach in Geneva
Presented by the **Cantonal Water Office** - Switzerland
Launched by the Cantonal Water Office of the Canton of Geneva in 2019, the «Eau en ville» approach aims to lastingly transform urban water management in line with the Sponge City concept. In six years, it has driven a genuine change in practices, with nearly 150 projects supported at different scales. The approach relies in particular on experiments (virtual reality, pilot projects, soil renaturation) and on training actions, including the first certification in French-speaking Switzerland for Sponge City coordinators.



Multi-stakeholder engagement and support category

The «Water» strategy, an opportunity to reinvent the city
Presented by **Bouygues Immobilier** - France
As cities face the growing scarcity of water ressources, and the increasing frequency of climate-related hazards, Bouygues Immobilier has developed a water management strategy in 2025. This strategy is built on two pillars: reducing water consumption, and ensuring sustainable, integrated stormwater management. This latter pillar is based on the implementation of systems aiming at zero runoff from the site during centennial rainfall events.

Urban renewal project category



The wooded swale of a residential condominium, rue Duguesclin, Lyon
Presented by **INDIGÈNE paysages** - France
The Rue Duguesclin project in Lyon turns a deteriorated green strip into a true piece of urban ecological infrastructure. By separating drainage systems and disconnecting a large share of roof runoff, rainwater is now infiltrated on site through planted swales. This linear wooded system, nearly 150 metres long, creates a cooling effect through shading and evapotranspiration while forming a link in the ecological corridor between Parc de la Tête d'Or and Parc Blandan. Using locally sourced, wildlife-friendly plants, the project creates a resilient and low-maintenance landscape. It continues the modernist legacy of Zumbrunnen and Sillan through a contemporary interpretation of living ground and collective stewardship.

Jury's Special Award



The Swaminathan «sponge» park in Chennai, India
Presented by **Sponge Collaborative** - India
Dr. M.S. Swaminathan Eco Park in the coastal megacity of Chennai is one of India's largest demonstrations of a Sponge Park as blue-green infrastructure (BGI) for mitigating climate risks of flooding, heat, and water scarcity. The heart of the 16.63 acres project is a restored waterbody receiving treated sewage water. With restoration, the waterbody has become a wetland habitat and flood buffer with 30,000 m3 of storage capacity.

People's Choice Award



The Great Pathway: designing a coherent inter-municipal landscape integrating sustainable rainwater management / Presented by **Est Ensemble** - France
Le Grand Chemin is a 55 km green loop when completed, scheduled for 2030: 36 km of this loop cross the 9 towns of the Est Ensemble public territorial establishment and aim to connect numerous parks and green spaces of Grand Paris. The specificity of this section of the project is that it is embedded in the existing urban fabric of these 9 municipalities, transforming public spaces into an «inhabited park» route that reconciles soft mobility, ecological continuity, the creation of biodiversity supports that can become urban cool islands, and leisure spaces.







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