ICE NI submission to the Committee for Infrastructure on the Water, Sustainable Drainage and Flood Management Bill

March 2026

About the ICE

The Institution of Civil Engineers (ICE) is a 97,000-strong global membership organisation with over 200 years of history.

It is a centre of engineering excellence, qualifying engineers and helping them maintain lifelong competence, assuring society that the infrastructure they create is safe, dependable and well designed.

Its network of experts offer trusted, impartial advice to politicians and decisions makers on how to build and adapt infrastructure to create a more sustainable world.

ICE NI previously provided oral evidence to the Committee for Infrastructure on the Water, Sustainable Drainage and Flood Management Bill and welcome the continued engagement on this topic.

Submission

Following the evidence session, Members of the Committee have written to seek further written responses on a number of points. This submission focusses on the areas of:

- General provisions and aims of the Bill
- Implementation in other jurisdictions
- Defining SuDS and SuDS Approval Body
- SuDS, open space and health and safety consideration

General provisions and aims of the Bill

1. What are your general observations on the Bill and its legislative aims?

The Bill and its legislative aims are well aligned with current best practice across these islands.

As we face increasing urbanisation and climate change challenges, it is important that we create and utilise emerging and new techniques in surface water management to enhance and protect communities and facilitate economic growth.

SuDS are environmentally friendly techniques[1] to help manage and control surface water runoff close to where it falls. However without clearly assigned responsibility or identify funding, the use of SuDS will remain inconsistent. Legislation that enables the widespread adoption of SuDS is something the ICE and many other experts have been supporting for some time.

The benefits can only be realised in the context of a clear and robust regulatory and policy framework including a sustainable funding model, so ICE welcome this Bill in providing this clarity.

2. In your view, which clauses or provisions require refinement or enhancement in order to better support the legislative aims, while avoiding unintended consequences should the Bill be enacted?

It is not for ICE to speak directly to the legislation however on initial review this Bill appears to support the legislative aims in principle.

Infrastructure challenges today – ranging from climate change to rapid urbanisation – are more complex and interconnected than ever before. The exceptionally wet[2] start to 2026 emphasises the challenges and risks from a changing climate.

Meeting these challenges requires more than just investment – it demands a clear, strategic approach grounded in long-term thinking, collaboration and adaptability.

Effective cross-department collaboration is needed to ensure all departments are engaged with adaptation and recognise the challenges that climate impacts can have across multiple sectors at any one time. The ICE's 2025 paper on government structures for climate resilience[3] concludes that global governments should action a number of recommendations to strengthen global infrastructure climate resilience, of which key aspects could also be considered in the context of enactment of the Bill

- Establish clear roles and leadership to coordinate infrastructure resilience across all levels of government and avoid fragmentation.
- Set measurable adaptation targets to ensure plans drive real progress.
- Create coordination platforms to strengthen collaboration between national, regional and local governments.
- Provide dedicated funding, tools and training to local authorities to enable them to assess climate risks and implement effective adaptation plans.
- Engage communities to build public support and integrate local knowledge.
- Embed climate risk into infrastructure planning to address both current and future risks.

[1] www.ice.org.uk/news-views-insights/inside-infrastructure/types-nature-based-solutions-consider-for-projects
[2] www.metoffice.gov.uk/blog/2026/why-has-it-been-so-wet-this-winter
[3] https://www.ice.org.uk/media/3eallw1j/ice-insights-paper-infrastructure-resilience.pdf

- Align public funding with resilience goals and reform appraisal methods to reflect long-term benefits and avoided damages. Incentivise private investment in resilient infrastructure through incentives and regulation.
- Mandate climate risk disclosure and resilience standards to improve transparency and accountability

Due to the cross-departmental nature of this legislation it is recommended that following enaction, a review is undertaken to feedback on the uptake and adoption of the Bill. Clear leadership and coordinated policy that crosses the traditional silos of government departments is needed.

3. Given that much of the Bill provides for regulation-making powers for the Department, what specific matters, if any, do you consider should be set out on the face of the Bill?

It is recommended that either within the Bill or immediate follow up, clarification of the sub-division of the Department within which responsibility for approval, adoption and maintenance lies should be outlined. Linkages with planning powers held by local councils and relative hierarchy should also be considered.

4. What essential requirements do you consider should be specified or included within any future regulations to ensure that they are workable in practice?

As stated above, clear responsibilities for approval, adoption and maintenance are considered essential requirements and as such, clarification around the establishment of a SuDs Approval Body (SAB) should be considered.

It is not for ICE to comment on the specifics or department if such a body were to be established. They key thing is its responsibilities need to be clearly defined and that the body is appropriately skilled and funded.

Infrastructure operates as 'a system of systems', within which impacts on one infrastructure system or asset type can cascade across the wider systems affecting connected infrastructure, assets and the communities they support[4]. Our infrastructure systems are being tested more regularly and more deeply – there are many interdependencies between infrastructure systems - We are seeing this with the current impacts on housing connections for example.

A systems-thinking approach to resilience and adaptation is therefore needed which builds in sufficient flexibility for infrastructure to adapt to potential future impacts which haven't yet been predicted.

Opportunities must be taken now to avoid future issues – issues which could have a negative impact on how we provide sustainable infrastructure for our communities and how we live and work every day.

Infrastructure owners and operators must better understand the other networks and systems they are dependent on and interdependent with. Increasingly, a failure in one sector will impact another due to the interconnectivity of our systems.

[4] resilient-northern-ireland-20241.pdf

While climate change is taken into account in the design of specific infrastructure assets, it is very much only on a project by-project basis, without a proper resilience framework. Climate resilience and future adaptation must be considered and prioritised during the development of policy and legislation.

Asset owners and policymakers need to take a long-term and systems-wide perspective that considers risks and interdependencies from assets in other sectors, and ensure that they build in sufficient flexibility for infrastructure to adapt to potential future impacts which haven't yet been predicted.

Implementation in other jurisdictions

5. How do the provisions in the Bill compare with similar legislation enacted in other jurisdictions?

ICE is not in a position to speak directly to the legislation enacted in other jurisdictions; however, stresses the need for clear guidance defining responsibilities. The variation in policy and legislation surrounding SuDS delivery, in combination with differing governmental (national and local) organisational structures, funding and skills, is often cited as a challenge to the delivery of successful SuDS (as found in CIWEM's report, 'A Place for SuDS', 2017[5]).[6]

There are a range of approaches across Wales, Scotland, Ireland and England, however each approach would require adaptation for it to be applicable for N Ireland. From a policy standpoint, long-term adoption by a public authority is preferred to ensure assets are maintained through their lifecycle.

This approach would require sustainable funding mechanisms and clear legislation on roles and responsibilities.

WALES

Wales is widely regarded as having the strongest statutory SuDS regime in the UK and Ireland, fully implementing Schedule 3 of the Flood and Water Management Act[7].

- SuDS are mandatory for all new developments of 100 m^2 or more.
- Wales has functioning SuDS Approval Bodies (SABs) at local authority level (this may not be appropriate for NI considering scale and the need for a consistent Province wide approach).
- Mandatory adoption and approval ensures a consistent, enforceable process.

Wales is also regarded as having the strictest and most prescriptive legislation, with fully mandatory SuDS and statutory approval requirements.

SCOTLAND

Scotland has one of the longest-established and most embedded SuDS regimes in Europe, with over 20 years of legislation and policy integration that is widely considered to be progressive. Although there is no SAB, planning,

[5] A Place for SuDS Online.pdf
[6] ice-aco-suds-route-map-booklet-feb2018.pdf
[7] Flood and Water Management Act 2010

approval adoption and maintenance are integrated between Scottish Environment Protection Agency (SEPA) and Scottish Water.

As a result of the length of time over which SuDS have been established there is strong alignment between Scottish Water, SEPA, planners, and developers. Given the different responsibilities and funding models between NI Water and Scottish Water this relationship is unlikely to be replicable in Northern Ireland

Legislation in Scotland has been historically water quality driven including from impermeable runoff (e.g. from roads) but is now heavily influenced by flood risk management.

SuDS requirements are integrated into planning policy, environmental regulation, and water utility adoption practices.

Overall Scotland is considered a mature, integrated SuDS jurisdiction where SuDS are mandatory in most developments and widely adopted.

IRELAND

Ireland has been modernising SuDS policy primarily through planning guidance rather than a single overarching SuDS statute.

- SuDS are "encouraged" through planning and environmental policy.
- Generally, a strong policy-level support but lacks a single mandatory statutory enforcement framework equivalent to Wales' SAB regime.
- Recent shifts highlight alignment with UK/EU stormwater (surface runoff) best practice, but implementation varies by local authority.

Overall Ireland is policy-driven, promoting SuDS strongly but without a unified statutory approval body.

ENGLAND

England uses a mixed framework of planning policy, national standards, and water legislation—but Schedule 3 of the Flood and Water Management Act was never enacted. SuDS delivery is therefore required primarily through planning rules.

- National Standards for Sustainable Drainage Systems [8] (updated July 2025) provide detailed design and performance criteria for new developments. These are widely used across all UK regions and Ireland.
- Water (Special Measures) Act 2025 [9]now requires water companies to consider nature-based solutions such as SuDS in statutory Drainage and Wastewater Management Plans.

[8] National standards for sustainable drainage systems (SuDS) - GOV.UK
[9] Water (Special Measures) Act 2025

- SuDS required for major developments, but enforcement occurs via planning authorities—not a dedicated SAB.

England operates a policy-and-standards model, but without statutory SAB enforcement.

6. What lessons can be drawn from the implementation of sustainable drainage and flood management legislation elsewhere in the UK, particularly in Wales?

The Welsh approach outlined above is considered the strictest as SuDS are mandatory for 100m2+ developments, the Flood and Water Management Act Schedule 3 is fully implemented including SABs.

Wales is the first UK nation to introduce mandatory SuDS for most new developments. In recent years multiple independent reviews (Arup 2023 Post Implementation Review Report[10], CIWEM Sustainable Drainage Position Statement[11], CMS/COMS summaries[12]) have summarised findings:

- A statutory mandate must be matched with investment in governance, skills, and consistent processes.
- Developers need clear, unified, and consistently applied guidance - fragmentation slows delivery.
- Technical standards should be ambitious but flexible enough to avoid disproportionate burdens on small or unusual developments.
- Adoption works best with standardised funding mechanisms and clarity around long-term maintenance responsibilities.
- Systematic data collection is crucial for tracking outcomes, improving performance, and informing future policy.
- Better integration of SAB and planning processes is vital to avoid delays and duplicated effort.
- The SuDS regime needs its own skilled, technically capable appeals and enforcement pathways.
- Cross-sector collaboration and shared learning are essential to refine and evolve SuDS implementation.
- SuDS deliver major benefits, but continued investment, training and policy refinement are necessary.

7. How effectively has comparable legislation in other UK jurisdictions been monitored and reviewed?

ICE is not in a position to speak directly to the legislation enacted in other jurisdictions. In regard to the Flood and Water Management Act (2010) in England and Wales:[13]: there are legislative implementation differences:

- England: Schedule 3 (SuDS) was not implemented for over a decade, creating long-term monitoring gaps. DEFRA only concluded in 2023 that Schedule 3 should be implemented, with work toward adoption expected in 2024–26.

- Wales: Wales fully implemented Schedule 3 in January 2019, making SuDS mandatory on most new developments.

[10] Sustainable Drainage Systems (SuDS) Schedule 3 Post Implementation Review
[11] Schedule 3 – why we can't afford to wait for legislation to catch its tail - CIWEM
[12] Welsh SuDS review - Ocean and Coastal Futures
[13] Flood and Water Management Act 2010

This major divergence means Wales has four years of operational evidence and structured monitoring that England does not yet have.

Defining SuDS and the SuDS Approval Body

8. Do you consider that the regulation-making powers contained within Clause 2 of the Bill are sufficiently robust, or do they require further definition in respect of technical standards, approval processes, adoption arrangements, and Timescales?

ICE considers the existing technical guidance on the design and maintenance of SuDS interventions, including the CIRIA SuDS Manual (C753) [14]which includes the application of the SuDS Management Train, to be comprehensive and sufficient for practitioners.

The ICE SuDS Task Group has produced a set of detailed, easy-to-follow visual route maps[15], sponsored by surface water drainage experts ACO Technologies. Regulations and custom and practice vary across the UK nations and between different local authorities, making the processes of SuDS delivery sometimes confusing[16]. The purpose of these route maps is to provide an overview of the main stages of delivering SuDS. The ICE/ACO route maps cover key delivery stages: from pre-planning, design and construction, to adoption and maintenance.

The primary challenge at a local level is not the availability of guidance, but the absence of a clear and consistent framework for asset ownership and long-term maintenance responsibilities.

Consistency across NI would be useful. The need for regional guidance is not considered a priority. Issues around funding, ownership and maintenance are more important.

It seems likely that in the interests of consistency, the Department would need to retain a strategic role in setting overarching procedures, approvals standards, and regulatory expectations, even if it does not engage in the detailed assessment of individual proposals.

If an SAB (SuDS Approval Body) were to be created, this may be a natural home for future technical best practice growth and development and as mentioned previously there is experience locally in the design, construction and maintenance of suds both in the public and private sectors.

If an SAB were created and suitably staffed and advised it could establish best practice inside the legislative framework.

[14] The SuDS Manual C753F
[15] ice-aco-suds-route-map-booklet-feb2018.pdf
[16] Sustainable Drainage Systems: Latest Guidance | Institution of Civil Engineers (ICE)

9. What is your view on the definitions of "Sustainable Drainage Systems" and structural SuDS as set out in Clauses 4 and 5?

- Are these definitions sufficiently clear and workable for planning, design and regulatory purposes?
- Do these definitions require refinement or further clarification from the Department?

Clause 4: ICE are content that the meaning of SuDS in clause 4 is suitable

Clause 5: amending the Water and Sewerage Services Order to include "structural sustainable drainage system". ICE are content with this amendment.

10. Clause 2 makes provision for the possible establishment of a SuDS approval body. In your view:

- Should responsibility for this function fall to a single central authority?
- What is the most appropriate model for delivering an efficient and timely approvals process?

Many models exist in these islands around different public bodies approach to adoption and maintenance of SuDS and a range of options are available.

Sole responsibility for SuDS lying with private "management companies" comes with inherent risks regarding long term sustainability and consistency - especially where these features contribute to catchment wide benefits with respect to flood resilience and water quality.

Although the maintenance tasks themselves are generally straightforward, the lack of clarity around ownership can hinder effective implementation and long-term performance.

It is not for ICE to comment explicitly on which body or bodies should adopt SuDS. It may be that a single organisation cannot be selected, but clear guidelines as to responsibilities would need to be laid out.

From a policy perspective, long term adoption by a public authority is the preferred outcome, as this provides greater assurance that assets will be maintained throughout their lifecycle.

This needs to be accompanied by appropriate sustainable funding and clear legislation on responsibilities.

SuDS, open space and health and safety considerations

11.At present, SuDS features in Northern Ireland do not count towards the 10 per cent open space requirement in new developments:

- What is your view on this position?
- Do you consider that SuDS should be defined as green space?

- How are SuDS features treated in planning and open space policies in other jurisdictions?

Where there is opportunity to do so, ICEs view is to integrate appropriately various aspects of legislation or planning guidance to deliver efficient and sustainable outcomes for local communities. SuDS is becoming more than just drainage, it is integrated into wider urban planning which brings multiple economic, environmental and social benefits.

- England: SuDS can count toward public open space, if designed as multifunctional green/amenity space. This is supported by SuDS design guidance indicating SuDS areas can contribute to public open space requirements when usable as amenity space during dry periods.
- Wales: Not explicitly stated in national legislation. Welsh SuDS standards tend to focus on performance and SAB approval, not open-space policy. Some Local Planning Authorities may allow multifunctional SuDS to contribute to open space, but it is not guaranteed and depends entirely on local planning policy. (permanent standing water areas are unlikely to be included).
- Scotland: Currently there is limited information indicating a rule linking SuDS directly to open-space percentage requirements. As with Wales, multifunctional SuDS may be acceptable to some planning authorities, but this is determined locally

It is recommended that clarity is provided so the proposed final position of the legislation should be explicit with exceptions if needed, or excluded.

12.What are your views on health and safety considerations relating to SuDS features such as attenuation ponds?

- How can safety be appropriately balanced with usability?
- Have there been examples of health and safety issues at SuDS sites elsewhere in the UK?

There is lengthy best practice on design for safety published by CIRIA in the SuDS Manual C753, the supportive community susdrain[17] and RoSPA- Sustainable Urban Drainage Systems (SuDS) & Safety[18]

CIRIA Health and safety principles for SuDS: framework and checklists, CIRIA RP992 The SuDS Manual Update , Paper RP992/17, November 2013[19]:

> *"Well-designed SuDS components includes features that are no more hazardous than those found in the existing urban landscape, for example ponds in parks. Where communities understand and support the above principles and values, then they are more likely to embrace the improved landscape and respond to such hazards in a positive, reasonable and responsible manner."*

> *"Counter-intuitively, the key to challenging risk aversion is the application of balanced risk assessment. There is a need to accept that uncertainty is inherent in adventure and this contains the possibility of adverse outcomes.*

[17] Susdrain - The community for sustainable drainage
[18] RoSPA- Sustainable Urban Drainage Systems (SuDS) & Safety | RoSPA
[19] paper_rp992_17_health_and_safety_principles.pdf

The Royal Society for the Prevention of Accidents (RoSPA) sums up this approach: We must try to make life as safe as necessary, not as safe as possible."

Much Health and Safety reporting on drowning does not classify SuDS as a specific "waterbody type" so it is difficult to explicitly report on this. Whilst in no way advocating for SuDS or dismissing safety concerns, SuDS are typically:

- shallow,
- graded with gentle slopes,
- often dry most of the year,
- designed with safety as a requirement (CIRIA C753 emphasises safety design).

Thus, SuDS ponds do not behave like natural ponds, lakes, or deep balancing reservoirs.

It is recognised that the introduction of education and awareness campaigns where SuDS (if they exhibit standing water) are introduced may be considered part of a best practice approach.

SuDS Case studies:

Susdrain.org[20] contains a suite of case studies relating to SuDS across England, Scotland, Wales and N Ireland, both peer-reviewed and non peer-reviewed.

[20] Case studies