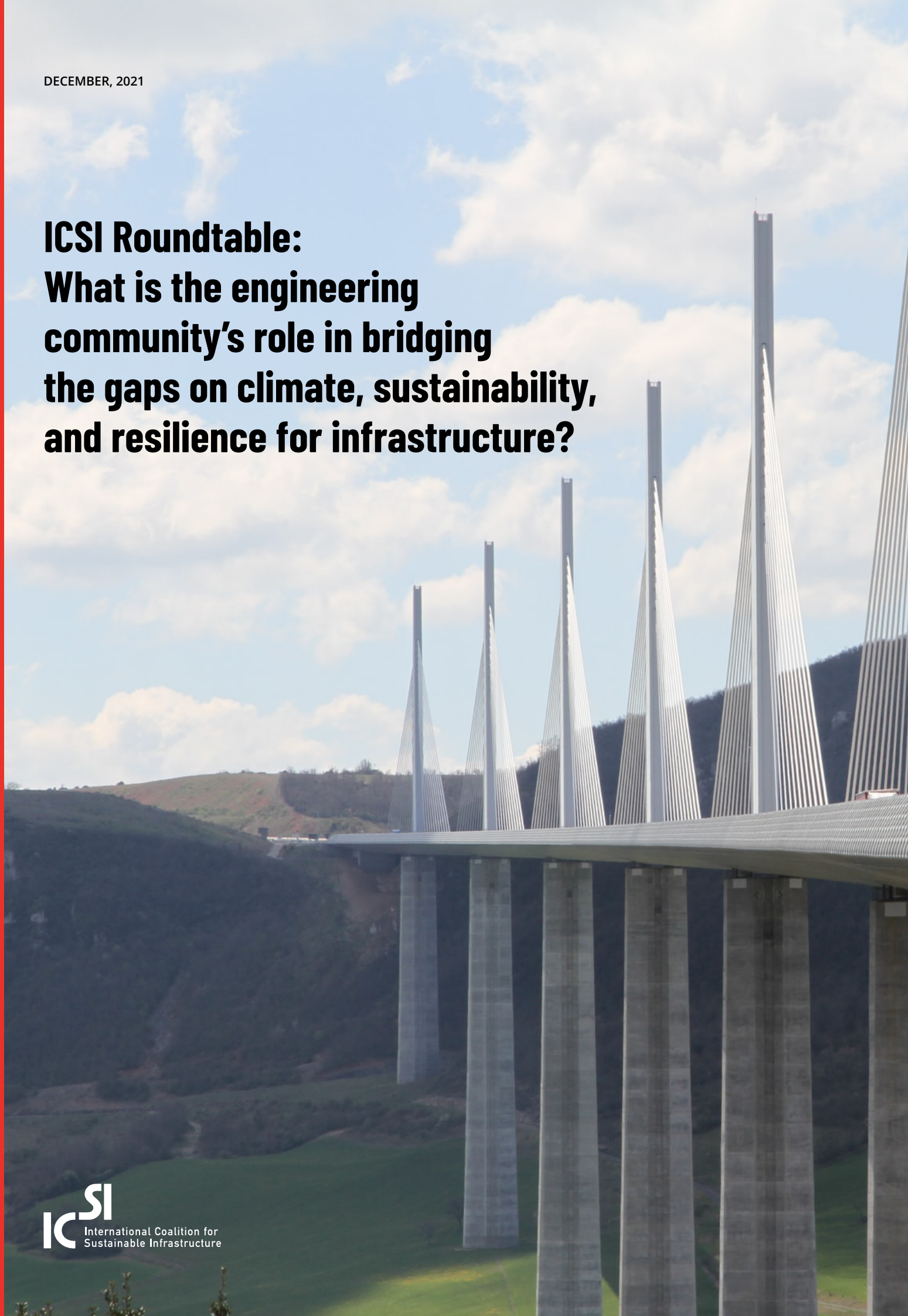
DECEMBER, 2021

ICSI Roundtable: What is the engineering community's role in bridging the gaps on climate, sustainability, and resilience for infrastructure?



International Coalition for Sustainable Infrastructure

ABOUT INTERNATIONAL COALITION FOR SUSTAINABLE INFRASTRUCTURE (ICSI)

The International Coalition for Sustainable Infrastructure (ICSI) was founded in 2019 by The Resilience Shift, the American Society of Civil Engineers (ASCE) and its ASCE Foundation, the Institution of Civil Engineers (ICE), the Global Covenant of Mayors for Climate & Energy (GCoM), WSP and LA Metro, among others. We aim to bring together the entire value chain of infrastructure and unlock the opportunity of using engineers as a driving force for positive impact and climate action.

ICSI is the voice of the engineering community on infrastructure sustainability, resilience and climate action. We place engineers at the forefront of climate action, harnessing their ability to provide solutions and matching it with urgent demand. The solutions we develop and promote will deliver impact on the ground, where it is needed most.

ICSI connects those with the demand and those with solutions by:

- Delivering through strategic partnerships
- Scaling up through thought leadership and knowledge-sharing
- Tracking global impact

We bring together a coalition of partners committed to bold action to solve the systemic problems that exist at the intersection of climate change, ageing infrastructure, and underinvestment.

On 3 Nov 2021, we hosted a roundtable discussion at the COP26 Wood House in Glasgow, focussing on issues at the heart of ICSI, and the engineering community's role in bridging the gaps on climate, sustainability, and resilience for infrastructure. We brought together key stakeholders in the sector, including ICSI's Board members, and invited members of the public to join us in exploring the topic at hand. Below are some key takeaways from the discussion as well as information on newly launched ICSI initiatives.

ATTENDEES:

Amanda Eichel (The Resilience Shift)
Andy Deacon (GCoM)
Areti Koskosidi (ICSI)
Beena Chester (Resilience First)
Ben Walpole (ASCE)
Brian Parsons (ASCE)
Claire Bonham-Carter (AECOM)
Cris Liban (LA Metro)
David Lapp
Debi Denney (ASCE)
Gong Ke (WFEO)
Gregor Robertson (GCoM)
James Leggate (Engineering News-Record)
Jeshika Ramchund (South African Institution of Civil Engineers)
Jo da Silva (Arup)
K.N. Gunalan (ASCE)
Laurie Bowman (Synchrony)
Maren Hozempa (WSP)
Maya Zung (WSP)
Michael Sanio
Mike Rooney (Resilience First)
Nur Orak
Oliver Obregon (Golder)
Peter Hall (Wood plc)
Richard Threlfall (ASCE)
Sarah Hall (ICE)
Sasha Corde (WSP)
Seth Schultz (The Resilience Shift)
Tom Lewis (WSP)

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WHY DOES THE WORLD NEED A COALITION LIKE ICSI?

The world is at a pivotal point in the global climate crisis; timeframes to address climate change have compressed and there is a renewed sense of urgency for climate action following the recent IPCC report, which U.N. Secretary-General António Guterres described as a 'code red for humanity'. The decisions we make today will influence our ability to thrive tomorrow. So what does this have to do with engineers?

- Engineers have a crucial role to play in responding to the climate crisis: they hold the technical expertise needed to drive solutions and implement action. The world needs engineers to ensure that both existing and new infrastructure can withstand the impacts of climate change and ensure a thriving, sustainable future for all.
- Engineers are widely trusted by the public: the engineering community is well-positioned to make an impact beyond their own industry, to influence policy and planning, and to become leaders on climate action.
- Engineering challenges are disproportionately spread across the globe: infrastructure needs are rising, particularly in regions with growing urbanization, and in places where climate impacts are putting pressure on existing infrastructure.
- But there is an imbalance of science and engineering capacity across geographies: We are missing engineers in regions where they are most needed. As the infrastructure requirements increase, so too does the need for engineers and infrastructure specialists in these regions. For instance, 10 million engineers are needed in Africa alone in the next 30 years in order stay within the 1.5˚C goal.

"We are, after all, the greatest problem solvers to have ever existed on Earth. If working apart, we are a force powerful enough to destabilise our planet. Surely working together, we are powerful enough to save it."

- Sir David Attenborough, COP26 Address

ICSI'S VISION

Engineering a more sustainable, just and resilient future

ICSI'S MISSION

Mobilizing an engineering-led coalition to make resilience and sustainability a cornerstone of every decision in the infrastructure lifecycle in every community around the globe.

"I think the vision of ICSI is beautifully pragmatic. Let's actually understand the problems that we've got to overcome and solve them. It's engineers being engineers. It's engineers doing what we do best."

- Dame Jo da Silva

BECOMING GLOBAL

Since 2019, and with the Institution of Civil Engineers (ICE) coming on board last year, ICSI has sought to expand its reach beyond the US. Through ICE and ASCE, both members of the World Federation of Engineering Organisation (WFEO), ICSI has established a broad reach into different regions and corners of the world.

Recognising that we are still Global North-heavy, one of our key areas of focus in the coming year is to expand further to be a truly global coalition, ensuring that we have a Global South engineering association represented on the Board. We were glad to welcome a representative from the South African Institution of Civil Engineers at the roundtable discussion and look forward to continuing this engagement going forward. With a renewed sense of urgency to fight climate change, attendees agreed that ICSI's success will lie in an inclusive, collaborative approach that allows us to act as a force multiplier, rather than a competitor. Global representation will be essential to delivering this impact.

FROM THEORY TO PRACTICE

ICSI's knowledge resources and initiatives will help shift the development of sustainable and resilient infrastructure from theory to practice, in turn supporting ICSI's mission to create a global movement for engineering action.

WHITE PAPER ºN GREEN RECOVERY AND FINANCE FOR SUSTAINABLE INFRASTRUCTURE

Investment in critical infrastructure over the next decade is a critical element of climate action, particularly in the Global South. Significant sums of money have been put on the table for adaptation and resilience and for decarbonisation of infrastructure, but the challenge will be in working out how to ensure that this money is spent effectively. Another major challenge is establishing where the engineering capacity is, and how to collectively work to redistribute that capacity to where it's needed.

In addition to government spending, private sector financing will be instrumental in achieving this. Our recently published white paper, Green Recovery and Finance for Sustainable Infrastructure, is an output of our Finance Action Track and has been primarily coordinated by a team from the Global Covenant of Mayors for Climate and Energy (GCoM).

The roundtable discussion highlighted that the more organised we are as a collaborative, the better our chances are of influencing where green recovery funding goes. We can connect the dots and drive funding directly into the cities, communities and projects that need it, particularly those that can't afford a pre-feasibility study and don't have the engineering capabilities required.

The reach and vision of GCoM allows ICSI to deliver impact on-the-ground, at this hyper-local level. Engineers have the technical know-how and play a critical role in climate action for cities – but the leadership, governance, and vision of city leaders is crucial to move from ideation to implementation. By connecting the engineering community with city leaders, these elements are brought together so that technical knowledge, thought leadership and policy can all work hand-in-hand to transform the built environment, one green building at a time. ICSI therefore functions as a vehicle through which to harness this action at a global scale.

GREEN RECOVERY AND FINANCE FOR SUSTAINABLE INFRASTRUCTURE

This white paper addresses how private and public stakeholders can support the funding that's necessary to spur a green recovery by sufficiently funding the early stages of infrastructure project development (pre-development) to achieve sustainable outcomes. It functions as a toolkit for laying out much of the predevelopment funding opportunity.

Integrating sustainable infrastructure investments into government investments in infrastructure, especially with a specific focus on expected stimulus packages to mitigate the economic downturn from the Covid-19 pandemic, is key to building a sustainable and resilient future.

A key strategy to ensure sustainable outcomes from stimulus efforts and other planned infrastructure investments is to integrate pre-development funding for municipal, state and federal projects, as well as private sector project developers and multinational finance institutions.

Read the full paper **here** and take a look at ICSI's other thought leadership and knowledge products **here**.

RACE TO RESILIENCE

One route to delivering this impact is through the UNFCCC-backed Race to Resilience campaign. The High Level Climate Champions Race to Resilience, the sibling campaign of Race to Zero, was launched at the Climate Adaptation Summit on 25 January 2021 by Alok Sharma, COP26 President designate.

Through a partnership of initiatives, the campaign focuses on helping frontline communities build resilience and adapt to the impacts of climate change, such as extreme heat, drought, flooding and sea level rise.

As an official Partner Initiative of the campaign, ICSI has pledged to mobilize the engineering community to build and enhance climate resilience of infrastructure through the work they do.

ICSI is the biggest coalition of engineers in the world, influencing the work of over 200,000 engineers in 175+ countries. Because of this, ICSI offers an unparalleled opportunity to act as a catalyst for engaging with the engineering community on the global agenda for climate action and resilience building.

A global commitment campaign will seek to bring individuals and engineering companies on board to support the ICSI pledge and make their own Race to Resilience commitments.

ICSI will be developing a reporting mechanism and platform to capture the progress of these participants.

The campaign also offers opportunities for partnership and collaboration with other Partner Initiatives such as Resilience First, the Coalition for Climate Resilient Investment, and the Cities Race to Resilience.

OUR RACE TO RESILIENCE PLEDGES

in 2021:

to secure commitments from minimum 10 of the world's largest engineering firms and individual commitments from 1,000 engineers globally to the ICSI Pledge.

by 2030:

ICSI Race to Resilience participants will have influenced and/or delivered 3,780 projects in 210 cities to improve the climate resilience of 567m people.

Read more about ICSI's Race to Resilience **here.**

INFRASTRUCTURE PATHWAYS

Another key action point for the Race to Resilience campaign is the delivery of Infrastructure Pathways, an initiative by ICSI and The Resilience Shift and delivered by Arup. Infrastructure Pathways was launched at COP26 and is a living resource that will evolve and grow as users provide input and feedback and, in time, it will foster a community of practice.

Infrastructure Pathways is a web-based resource that aims to organize and link key existing information, guidance, and tools on climate-resilient infrastructure across the infrastructure lifecycle. It aims to bring clarity and consistency in an otherwise confusing and fragmented landscape of existing resources by linking and distilling existing guidance into actionable statements, creating a 'golden thread' across systems and practitioners.

Ultimately, Infrastructure Pathways intends to provide a mechanism for more informed decision-making, improved coordination, and better collective impact from practitioners across the infrastructure lifecycle to embed climate-resilience in infrastructure.

Explore Infrastructure Pathways here.

DEEP COLLABORATION AND PARTNERSHIP

Deep collaboration, or 'Big C Collaboration', goes beyond lip service or surface-level partnerships and requires a deeper sharing of skills, resources, and vision in pursuit of a broader collective goal, alongside individual ambition. This has been fundamental to ICSI's vision since our inception.

Collaboration is part of ICSI's DNA, as is evident from the various Founding Organizations who came together to pursue the shared vision of inspiring greater action and visibility from the engineering community.

With the challenges of climate change, urbanisation and the fourth industrial revolution, the engineering community is facing pressure and uncertainty on a new scale. 'Big C Collaboration' will be fundamental in overcoming these challenges and the engineering community needs to work hard to further this kind of engagement.

Instead of representing individual organisations or institutions, ICSI members are intent on breaking down organisational silos and joining hands in pursuit of a common goal. The roundtable discussion highlighted that this kind of collaboration goes beyond cooperation, beyond coordination and requires an all-hands-on-deck approach that transcends firm, sector and region, and can ultimately lead to cogeneration.

Importantly, it requires organisations to roll up their sleeves and help unearth and address the challenges that countries, cities and communities are facing, and then bring engineering solutions to play.

The pursuit of this collective vision is not at odds with individual organisational goals. This collaborative approach can help to further both a shared and individual vision. The ICE charter, over 200 years old, is about the way in which engineers and engineering can help drive improvements in society. It has therefore always been in ICE's interest to take the knowledge and expertise from within the organisation and bring it to bear on a global scale. ICSI offers a mechanism and a platform to do this, for ICE and for all other members.

Similarly, ASCE has long been dedicated to protecting the health, safety and welfare of the public. Their recently published **communiqué** outlines actions and policies that leaders should support to address climate change and encourage resilient and sustainable infrastructure.

A handshake between ICE and ASCE is a critical first step in overcoming barriers to collaboration between engineering associations. It sets an important precedent and should be built upon in order to bring in organisations that represent the Global South and the Far East. This deep collaboration between perceived competitors presents a powerful opportunity for synergy and progress in the fight against climate change.

ACCELERATING ACTION

Urgent action is needed to ensure that vulnerable communities have the resources and capabilities to adapt to a changing climate and to cope with imminent climate impacts. COP26 has highlighted the need to unlock and align finance with climate-resilient development and ensure that finance flows to those who need it the most. We are at a critical juncture where we can decide to pursue resilient and sustainable infrastructure today, or we can let the opportunity for timely intervention and bold action pass by.

Sir David Attenborough's call-to-action during his COP26 address highlighted the importance of deep collaboration to meet our climate action goals. ICSI is proud to be championing this approach already and hopes to bring even more actors on board through the Race to Resilience campaign. We know that engineers will play a pivotal role in in the development of sustainable and resilient infrastructure, through ensuring that the right projects are selected and financed, and by using their deep technical expertise and knowledge to ensure that the projects are 'done right'. There is also growing recognition of the voice of engineers to advocate for faster and scaled-up implementation of low-carbon, resilient infrastructure.

We also know that engineers can't do this on their own. Through cross-sector collaboration, ICSI seeks to mobilize these critical players to act on climate change under a collective vision for sustainable and resilient infrastructure that can transform communities across the globe.

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www.sustainability-coalition.org