Jeju Declaration

ACECC Jeju Declaration for CECAR10, 2025

Preamble

Recognizing the critical challenges and opportunities facing the global and Asian civil engineering communities in the realms of sustainable development, climate resilience, and technological innovation, we, the participants of the 10th Civil Engineering Conference in the Asia Region (CECAR10), gathered in Jeju, commit to the principles and actions outlined in this declaration. This commitment builds upon the foundations laid by the Tokyo Declaration of 2019 (CECAR8), the Jakarta Protocol of 2013 (CECAR6), Presidents' Communiqué of 2010 (CECAR5), the Taipei Declaration of 2007 (CECAR4), the Report of Presidential Meeting of 2001 (CECAR 2), and the ACECC Code of Ethics Guidance (2022), and integrates the visionary outcomes of the recent UN Summit of the Future.

In preparing this declaration, we have reflected upon the findings of the SPG2.1.1 review report on past ACECC declarations and technical committees[1], ensuring continuity while addressing missing issues in past declarations. We emphasize the importance of proactively responding to emerging challenges and opportunities in the field, particularly those posed by the accelerating pace of technological change, such as the rise of artificial intelligence.

In an era of rapid advancement, we reaffirm the necessity of human-centered development, placing the well-being of individuals and communities at the forefront of civil engineering efforts. Through this declaration, we aim to guide the profession toward a future that balances innovation with inclusivity, sustainability, and resilience.

[1]Kato, H., Izawa, J., Inoue, M., Gautam, S., and Sarli, A. (2022) Challenges Facing Civil Engineers in Asia: Review of ACECC's Declarations and Technical Committees' Activities.

I Civil Engineering for Sustainable Society and Environment

1 Pushing towards the SDGs (Sustainable Development Goals)

We commit to advancing civil engineering practices that unequivocally support the achievement of the Sustainable Development Goals (SDGs), recognizing the shared threats posed by the COVID-19 pandemic, climate change, and the risks and opportunities presented by rapid technological advances. Acknowledging the current stagnation in progress towards the SDGs, we underscore the urgent need for intensified efforts across the ACECC countries. As civil engineers, we pledge to work diligently towards these goals, fostering solidarity between people, countries, and generations to create sustainable, inclusive, and resilient communities for all.

2 Embedding Climate Change and Disaster Resilience in Civil Engineering Projects

We recognize that many of the disasters we face today are direct and indirect consequences of climate change. In response, we commit to enhancing our resilience to climate-induced disasters through the integration of sustainable design principles, smart construction technologies, and disaster risk management strategies. Especially, to strengthen disaster resilience, we emphasize the role of smart and innovative technologies in disaster preparedness, response, and recovery. By integrating these technologies into early warning systems and infrastructure resilience planning, we aim to support safer and more adaptive built environments. We pledge to collaborate across disciplines and with communities to build environments that are resilient, sustainable, and capable of mitigating the impacts of climate change. Our actions will focus on reducing vulnerabilities, enhancing emergency preparedness, and improving response capabilities, all within the context of our broader commitment to climate adaptation and mitigation strategies.

3 Bridging the Global STI (Science, Technology and Innovation) Divide

Innovation and technology are key drivers of economic transformation and sustainable development in both developed and emerging economies. However, the full potential of STI remains underutilized in Least Developed Countries (LDCs), posing a significant challenge to achieving the SDGs. By leveraging advancements in science and technology, we can develop innovative solutions to pressing global issues, including healthcare, inequality, food security, and climate change. We commit to fostering international partnerships, promoting equitable access to knowledge and resources, and supporting capacity-building initiatives to close the technological divide and create a more inclusive global innovation landscape.

4 Poverty Reduction and Inclusive Infrastructure Development

We recognize that poverty reduction and inclusive infrastructure development are critical components of sustainable development. As civil engineers in the Asia region, we commit to improving the quality of life for marginalized communities by providing accessible and affordable infrastructure services. This involves collaborating with communities, adopting inclusive design approaches, and conducting social impact assessments to ensure that infrastructure benefits all segments of society. Through these efforts, we aim to foster social equity and create an environment where the fundamental needs of all people are met, thereby breaking the cycle of poverty.

5 Cultural Heritage Conservation

We acknowledge the importance of preserving cultural heritage as an integral aspect of sustainable development. Civil engineering plays a pivotal role in protecting and restoring historical structures and cultural sites, ensuring their resilience in the face of climate change and land use/land cover change. We commit to applying engineering expertise to conserve cultural heritage, utilizing advanced technologies and sustainable practices to protect the historical and cultural identity of communities. By integrating cultural considerations into our infrastructure projects, we aim to maintain the rich cultural diversity of the region while fostering social cohesion and a sense of shared history.

6 Ecosystem Conservation and Biodiversity Protection

We recognize the critical importance of protecting ecosystems and biodiversity as part of our commitment to sustainable development. Civil engineering projects must account for their impact on natural habitats, ensuring that infrastructure development does not come at the expense of ecological health. We commit to incorporating eco-friendly designs and construction practices that minimize habitat disruption, protect endangered species, and enhance natural ecosystem resilience, thus contributing to environmental restoration and sustainability

II Technological Innovation for Tackling Future Challenges

7 Innovation and Smart Technology

Acknowledging the rapid pace of technological advancement, we pledge to incorporate innovative and smart technologies in civil engineering projects to enhance the efficiency, safety, and sustainability of infrastructure. Smart technology — encompassing artificial intelligence, big data analytics, the Internet of Things (IoT), and beyond — offers unparalleled opportunities for improving project design, construction processes, and ongoing infrastructure management. By leveraging these technologies, we aim to create intelligent infrastructure that is adaptive, responsive, and capable of interacting with users and the environment in real-time.

8 Advancing Towards Carbon Net Zero in Civil Engineering

We recognize the urgent need to address climate change by reducing greenhouse gas emissions across all sectors, and we commit to leading the charge towards carbon net zero in the civil engineering field. We pledge to incorporate low-carbon design principles in civil engineering projects and innovate, implement, and advocate for sustainable practices, materials, and construction methods that significantly reduce carbon footprints. We will actively pursue research and development efforts that focus on low-carbon technologies and work to incorporate lifecycle carbon assessments into our planning and decision-making processes. By committing to these strategies, we aim to not only minimize the environmental impact of civil engineering projects but also to contribute positively to the global goal of achieving carbon net zero, ensuring a sustainable future for our planet.

9 Civil Engineering for Outer Space Development

Acknowledging the frontier of space as the next phase of human exploration and settlement, we commit to expanding the scope of civil engineering to include the development of sustainable habitats, infrastructure, and life support systems in outer space environments. This includes leveraging our expertise in sustainable development, resource management, and environmental protection to address the unique challenges of outer space construction and habitation. We pledge to promote research, collaboration, and education in the field of space civil engineering, fostering innovation that not only benefits extraterrestrial projects but also offers insights and advancements for sustainable living on Earth.

III Human-Centered Development and Collaboration in Civil Engineering

10 Education and Professional Development

We affirm the importance of continuous education and professional development for civil engineers, emphasizing the integration of smart technologies into our curricula and professional practices. This commitment extends to updating educational programs to include comprehensive training on these technologies, ensuring that new and existing professionals are proficient in their use and application. Furthermore, we pledge to foster a culture of lifelong learning within the profession, encouraging civil engineers to stay abreast of technological advancements and to continuously develop their skills in designing, implementing, and managing smart infrastructure systems. By doing so, we prepare our workforce to lead in the creation of sustainable, efficient, and intelligent urban environments.

11 International Collaboration, Knowledge Sharing, and Open Data

Recognizing the global nature of the challenges we face, we commit to enhancing international collaboration among civil engineering societies and advocating for open data practices within the sector. This combined effort will be achieved through the sharing of knowledge, best practices, and research findings, facilitated by open and accessible data platforms. We pledge to support the development of international standards for data sharing and transparency, encouraging the publication of research and project data in open formats that are accessible to all. By fostering a culture of collaboration and openness, we aim to accelerate innovation, improve project outcomes, and contribute to the sustainable development of infrastructure worldwide.

12 Equity and Gender Equality

We recognize the essential role of equity and gender equality in the advancement of civil engineering. We commit to fostering an inclusive environment that supports and promotes the participation of women and underrepresented groups in all aspects of civil engineering. This includes equitable access to education and career opportunities, fair representation in leadership roles, and the acknowledgment of diverse perspectives in the planning, design, and implementation of civil engineering projects. We pledge to implement practices that eliminate barriers to participation and ensure that our profession reflects the diversity of the communities we serve.

⓭ Promoting Youth Engagement and Leadership in Civil Engineering

We commit to nurturing the next generation of civil engineers by actively promoting youth engagement and leadership within our field. Recognizing the critical role young professionals play in driving innovation and addressing the challenges of the future, we pledge to create avenues for their involvement, development, and empowerment. This includes establishing mentorship programs, facilitating access to internships and cooperative education opportunities, and providing platforms for young engineers to contribute to research, design, and decision-making processes. By investing in the development of young talent, we ensure the civil engineering profession remains vibrant, dynamic, and prepared to meet the evolving demands of our world.

⓮ Upholding Ethical Standards in Civil Engineering

We recognize the importance of upholding ethical standards in civil engineering and commit to promoting the principles outlined in the ACECC Code of Ethics Guidance (2022), which provides a framework for integrity, obligation to sustainable development, competence, and professional responsibility. Ethical practice in civil engineering is essential to fostering public trust, ensuring safety, and advancing sustainable development. By adhering to these principles, we commit to responsible decision-making, transparency in professional conduct, and accountability to society. We encourage all civil engineers and organizations to integrate these ethical guidelines into their professional practices to uphold the highest standards of excellence in the field.