

# Redefining sustainability in infrastructure with Envision

This week, we will be shedding light on the inception of the Institute for Sustainable Infrastructure and the value the Envision credential and verification holds for our members and projects, aligning with COP27's theme of decarbonization of cities.

We sat down with Anthony Kane, the CEO of the [Institute for Sustainable Infrastructure](#) (ISI), to learn more about the history of ISI, the need for a measuring tool for sustainability in the infrastructure industry, and how Envision filled that gap.

## *Why was ISI created and how did that lead to Envision?*

ISI was created in 2010 through a collaborative effort from the American Society of Civil Engineers, the American Public Works Association, and the American Council of Engineering Companies after witnessing the transformative effect rating systems like LEED had on the architecture and building side. We recognized that LEED specifically did not apply to many of the infrastructure projects that engineers and infrastructure professionals develop. There was an imperative need for a tool that is customizable to the unique challenges and opportunities that infrastructure presents and has a single standardized framework for the entire industry. ISI then partnered with the Zofnass Program for Sustainable Infrastructure at Harvard University to release Envision in 2012 since both of our teams were working on similar tools.

Our work is far more than an award, certification, or plaque. Our goal was to have a standardized approach that transforms the industry. At the time, we did not have a set definition for sustainability in infrastructure, so we needed a unified approach to determine what is more or less sustainable and Envision filled that gap. That allows the industry to embed sustainability into education, impacting manufacturing and supply lines, influencing contract documents and procurement, and all kinds of benefits that come from having a standard definition.

We created Envision as a resource. It's an important reason why we offer the manual for free when you create an account because sustainability should be for everyone. Even if you don't want to get the credentials or put a project through verification, you can utilize the manual as a foundation for your sustainability work at no cost.



**Anthony Kane**

CEO of the Institute for Sustainable Infrastructure

## THE ENVISION SUSTAINABILITY RATING SYSTEM

Sixty-four sustainability indicators ('credits') across five categories



### QUALITY OF LIFE

Wellbeing | Mobility | Community



### LEADERSHIP

Collaboration | Planning | Economy



### RESOURCE ALLOCATION

Materials | Energy | Water



### NATURAL WORLD

Siting | Conservation | Ecology



### CLIMATE AND RESILIENCE

Emissions | Resilience

*What is Envision and how is it beneficial for people and projects?*

Envision is a way to define and measure sustainability and infrastructure. Sustainability includes a wide range of factors and we wanted to create a consistent framework. Envision has 64 sustainability credits that are divided into five categories that largely track the social, economic, and environmental pillars of sustainability. Each category looks at social leadership, collaboration, planning, economic impacts, resource allocation, climate resilience, and preparedness. Within each of those credits, we give different levels of achievement, recognizing that sustainability is a spectrum. When designing Envision, it was important to not just have a line in the sand and say, "If you get so many points, you're sustainable. If you don't, you're not." We wanted to use a rating system as a way of showing the full range of sustainability outcomes that you could strive for and that you may work towards in the future.

**“What I like about the Envision approach is how it focuses on what is applicable to everybody at Arup, regardless of professional backgrounds. The Envision certification focuses on five areas, Quality of Life, Leadership, Resource Allocation, the Natural World, and Climate and Resilience, all of which align with Arup’s long-term resilience and sustainability goals. Through our projects and clients, Arup is at the forefront of making change happen within the natural world and through Envision we can do so with clear guidelines to influence project designs that will benefit communities for decades to come. I believe that Arup is at its best when influence happens at any level of the project and company, and from any individual. No matter your background, what you learn from receiving the Envision credential will broaden your understanding of what sustainable means, and more importantly, how you can make change happen now.”**

Mark Westerhout, San Francisco

**“Envision added a new perspective to my Sustainability Management MSC by demonstrating how to compare the impact of different sustainable strategies in real-life infrastructure projects.”**

Catarina Carvalho, New York

*Who does the Envision credential benefit the most?*

It benefits everybody. Envision isn't a PhD, it's an introduction to what the concepts of sustainability embody. It's a great base level training for individuals so they can take those skills and go on to use Envision effectively on their projects and in their industry. One of the challenges with sustainability is that it can feel like it's no one's responsibility but also like it's everybody's responsibility, and with infrastructure projects, it really needs to feel like it's everybody's responsibility. Envision and the Envision Sustainability Professional (ENV SP) credential create a way of raising the base level of people's involvement and understanding. Ultimately, the people who benefit the most usually are the project team, whether it's designers, contractors, or project managers.

*Can you tell us more about the ISI community?*

The ISI community is the heart and soul of everything. I really see ISI as a hub for collaboration, it's a gathering place that brings private sector consultants, AEC firms, public sector agencies, and academics together to work towards a consensus-based framework. ISI leverages the Envision community to get the word out. We have seen the success and the adoption of Envision through AEC firms, taking it to their clients and saying, "Hey, here's this tool that could be very beneficial to you." Ninety percent of the adoption of Envision has been driven by Envision users, which I think is a great testimonial to its effectiveness.

We find that once people use it, they find value in it. You don't have to put every project through verification, but it's free to use, and if it helps you improve even one aspect of sustainability on a project, then that looks like success to us. We see Envision used in a wide variety of ways, but the most important thing is that the industry is starting to get a standardized, consensus-based approach to how we think about sustainability.

“The interest and involvement in Envision demonstrates Arup’s commitment to sustainability. The Envision process can be applied even without project verification so having learned the process has added a dimension to the work we are doing with our green hydrogen-based clients.”

Andy Ralph, Houston

*Is there anything else that we have not covered that you'd like to include?*

We are in a truly critical time for sustainability. We have underfunded and aging infrastructure. We've been waiting for a confluence of funding, and it seems as if the time had come with the Infrastructure Investment Act and the Inflation Reduction Act within the US, and it is being mirrored by the European Green Deal and investments across Asia. Globally, we are seeing trillions of dollars now being mobilized for infrastructure investment. It is now time to determine how those trillions of dollars should be spent towards sustainable solutions for the 21st century and not just to maintain systems that aren't going to help solve any of these problems we have. There is a real pressure right now to act quickly, be stronger advocates, and to try to push towards innovative new solutions and transformative infrastructure development.

Arup was one of the first companies that I heard was starting to think about a selective process for bidding and leading by example. You are doing a lot of important work, proving to other companies that it is possible to have a sustainable opinion on projects and that they can take that approach as well. I hope it's part of a larger transition, because I would love to see engineers stepping into leadership roles to help solve the problems that we're dealing with in the world. When we look at climate change, it's almost 90% infrastructure through energy transformation, decarbonization, issues with water supply and availability, environmental restoration, and many more. There are a lot of social elements that need to happen as well, but the engineering community will be the foundation for it all.

