the right project, done right

By John Lenti

Advocating a sustainable & responsible approach to infrastructure

As a Peace Corps volunteer in the early 1990s, I lived in Zangasso, Mali, a small fueling oasis on the only road between two provincial capitals. My Malian neighbors taught me about being resourceful and how to see new uses for what was once garbage. Take, for example, the plastic bag. It came in handy for many things: wrapping items to sell at the market, protecting important documents from termites—even applying henna dyes to women's hands. The plastic bags were upcycled or repurposed in imaginative ways. So it was with any garbage—nothing went to waste.

For one of my assignments, I provided technical assistance for irrigation to a garden cooperative that hoped to profit from Zangasso's roadside traffic by selling produce to travelers. It worked. On a visit 20 years later, I saw that the community garden was prospering—so much so that my village was able to build a new farmer's market, replacing the straw roofs and earthen floors with steel and concrete.

But I also saw a major pitfall in our project. On the outskirts of the village is a low-lying field that, due to local topography, becomes a small lake in the rainy season. Once a pristine habitat populated by exotic birds, the field now is a sea of shredded plastic. Like some bizarre crop ready to harvest, little strips of black plastic flutter in the wind, clinging to the dry brush. My neighbors no longer reused plastic bags. Once a scarce resource, plastic bags now are thrown away. With nowhere else to go, they end up in this field.

The experience came to mind recently while studying for the Envision Sustainability Professional exam. Developed by the Institute for Sustainable Infrastructure (ISI), Envision rates all infrastructure systems by examining how the design, maintenance and operational choices we make affect the triple bottom line: economic, social and environmental sustainability. The rating system takes a holistic vision of the environment by considering the pitfalls that might come on the heels of a development and examining the complex interconnections between competing desires. Studying the manual made me contemplate my own responsibility for that field and whether or not that community garden was the right project—or if we did it right.

Compare & Prioritize

Accepting responsibility is the first step toward getting back into the "sustainability quadrant." According to the Envision guidance manual, the sustainability quadrant is that sweet spot of human activity, wherein our careful use of resources contributes to the quality of life we cherish while ensuring we do not deplete the resources we are obliged to bequeath to our children. We in the U.S., however, maintain a high standard of living, but deplete resources at a per-capita rate greater than any other country. Like a car that gets terrible gas mileage, we are burning resources at an excessive rate to get to where we want to go.

At our current rate of consumption, we humans require the equivalent of 1.5 planets to support us—and this will be 2.5 planets by 2040 if we do nothing to address resource depletion, according to the Global Footprint Network. Imagine spending money two and a half times faster than you earn it. We are spending our natural resources faster than the earth can replenish them, and one day the bill will come due.

Using industry-standard means of evaluation, the Envision rating system identifies paths back to the sustainability quadrant through planning, design, construction and operation of infrastructure projects. An open framework of 60 credits in five categories, Envision helps determine a project's contribution to the following: quality of life, leadership, resource allocation, natural world, and climate and risk. At each stage of the project, we are asked not only if we are doing the project right, but also if we are doing the right project. In the development of Envision, ISI researched more than 900 rating systems from around the world and found them all to be sector- or region-specific—none covered all aspects of civil infrastructure.

That is not to say that Envision is meant to supplant other rating systems. For example, to evaluate occupied buildings, the U.S. Green Building Council's LEED rating system still should be used for multiple reasons, one of which is the excellent job it does in rating the comfort of the occupant—something Envision does not do. Envision, however, is applicable to the unoccupied industrial structures we design, including pump houses, vaults, mechanical facilities and so on.

Whereas LEED might be described as prescriptive, Envision is objective. Like a set of good tools, it enables builders of infrastructure to lead and take responsibility for the environment. As a planning tool, it can be used to assess and compare design alternatives and help prioritize projects based on their sustainable features. As a design tool, it can be used to identify opportunities to increase the sustainability of a project, selecting from numerous recommendations and defined performance criteria.

Engaging & Advocating

Additionally, Envision can be a public recognition tool, providing owners a vehicle to get recognition for their important contributions. By explaining the stress that resource depletion and anthropogenic climate change place on our systems, we may be better able to secure financing for the work that needs to be done. According to the American Society of Civil Engineers' 2013 Report Card of American Infrastructure, our systems are in terrible shape—we received a D+. American infrastructure is ranked 23rd overall, between Spain and Chile.

As leaders in our communities, we cannot passively sit by, watching changes to the environment and hoping for the best. We need to be more aware of and engaged in potential issues related to these changes and responsibly take part in resource conservation. We must be advocates to proactively help educate and inform. It no longer is enough for infrastructure to be built on time and within budget. It now must be sustainable, its impact on ecosystems and resources considered for decades to come. Envision can be used to help meet this responsibility. WWD

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