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The nature of positive

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The nature of positive

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The 'net-positive' concept could serve as both a new direction and an aspiration for evolving sustainable design beyond minimizing human damage toward human habitation that is a source of life. This commentary posits that realizing that potential depends on how practitioners define positive. Describing net-positive as 'buildings that "add value" to ecological systems and generate more than they need to fulfil their own needs' moves net-positive beyond simply a technical challenge of creating surpluses to one that requires confronting the widely different interpretations of value and value-adding held within the sustainability movement. 'Green' building, like the building industry, generally defines and measures a building's value in terms of human benefit. Ecological sustainability defines value in terms of benefits to the systemic capability to generate, sustain and evolve the life of a particular place. Reconciling these different definitions could transform how society conceives of and designs the built environment. Building professionals seeking to translate net-positive into practice could play a leading role in that transformation. Practice will need to embrace ecological thinking to create design, construction and ongoing management processes that stimulate dialogue about what it means for humans to play a value-adding role in the ecological systems where they are constituents.

Keywords: built environment, ecological sustainability, living systems, net-positive, place, regenerative design, social-ecological system

The term 'net-positive' is a succinct and catchy phrase that could serve well as both a signpost for the direction that needs to be pursued beyond 'green' building and a standard-bearer for rallying the energy, enthusiasm and creativity required to make human habitation of the Earth a source of life. It could provide the framework for pursuing what has always been implied in the concept of sustainability. However, this was not explicitly recognized until recently: if what society seeks to sustain are the conditions required for healthy life through time, then the way humans create and inhabit the built environment must contribute to those conditions. Whether it succeeds will depend in large part on how those working to translate it into practice define positive.

In more popular literature, net-positive is often used as short-hand for buildings that generate more resources/energy than they consume. Given the increasing sophistication of green technologies, it is not surprising that generating a surplus beyond a building's needs is seen as an inevitable and exciting next step. Its pursuit is made even more attractive by the implicit potential for economic return. However, such a pursuit is not without significant hazard.

In nature, an under- or unused surplus is a pollutant with potentially disabling if not toxic results for the larger system (Mollison, 1999, p. 18). Humans are already the primary source of such surpluses turned pollutants, e.g. so-called 'nutrients' that wash into streams from fertilized fields, leaking dairy waste storage ponds and, most famously, greenhouse gases. In this light, the *Building Research & Information* 'call for papers' summary of net-positive¹ as 'buildings that "add value" to ecological systems and generate more than they need to fulfil their own needs' adds a significant caveat to what makes surplus a positive. This caveat seems key to differentiating net-positive from simply a more advanced version of green technologies with wider marketing appeal. It also positions at the core of the net-positive design challenge the need to reconcile the widely different interpretations of value and value-adding that exist within the sustainability movement.

Green building was developed from the sciences of the physical world and a mechanistic worldview. This is the same foundation that most of the thinking and technologies of the building industry rely on. It has produced an industry structure and culture in which

the value of a building is still generally defined in terms of human benefit, most often measured in relatively short-term financial returns and human health. From this anthropocentric perspective, ‘ecological systems’ are resources or amenities to be managed and utilized for human purposes, so adding value to an ecological system must perforce mean making it more valuable to sustain human activity. The movement to assign monetary value to ecosystem services, which was stimulated by the desire to prevent further destruction of natural resources, was an effort to broaden this definition. So long as it is rooted in the anthropocentric and building technology-oriented way of thinking, it may simply be seen as an infrastructure-oriented and quantitative accounting exercise. The implicit suggestion is that such anthropocentric and technological perspectives may be abandoned if the numbers do not add up.

In contrast, from an ecological worldview, the almost infinite interrelationships of ‘ecological systems’ are the way living entities, including humans, relate to, interact with and depend upon each other in a particular landscape in order to pursue and sustain healthy lives. Eugene Odum spoke of ecology as the study of living beings in their home (Odum & Barrett, 2004). Many indigenous people refer to the plants, animals, insects and even geological features they live with as relatives. Regenerative Development uses the term ‘partners’ (Reed, 2007) to describe the members of an ecological system in the sense of partners in the business of creating the conditions that support healthy life in the place they co-inhabit. In this biocentric perspective, value is defined in terms of benefits to life. Adding value to an ecological system means increasing its systemic capability to generate, sustain and evolve increasingly higher orders of vitality and viability for the life of a particular place.

These are radically different ways of defining value. Despite their implications for sustainability, they remain largely unreconciled, in part because they are usually held unconsciously. Net-positive has tended to hover uncomfortably with a foot in both camps. This is not simply a philosophical discussion; the definition used has implications for every aspect of a net-positive building, from the starting point for design thinking to how to measure the effect and effectiveness of how surpluses are deployed. Setting a standard of adding value to ecological systems will hopefully bring the question to the fore. Indeed, it could be argued that net-positive’s real potential resides in transforming how society conceives of and designs the built environment. It is not a question of the new performance standards such buildings deliver. Instead, its potential may be its invitation to explore the questions these new performance aspirations raise: how society defines and measures value, and what it means for humans to

play a value-adding role in the ecological systems where they are constituents.

An example of how net-positive could stimulate such an exploration has precedent in the investment industry. A parallel to net-positive has emerged under the term ‘impact investing’ – investments that move beyond socially responsible investing (SRI) (*i.e.* minimizing damage) to investing for a ‘positive impact’ (Freireich & Fulton, 2009). When the term was coined in 2007, hundreds of initiatives had sprung up around the world aimed at leveraging financial investments to create greater social and environmental health. The term provided a common identity to these diverse but largely unconnected initiatives, and catalysed a more aligned effort to increase both the number and the effectiveness of investments aimed at positive impact (Story of Place Institute, 2013).

Initially, the main focus of impact investing dealt with the technical aspects of how to attract and funnel more investments into addressing social and environmental issues; this is the equivalent of net-positive’s focus on how to generate excess resources to support ecological systems. The dominant industry paradigm that investment was about growing stocks and flows of financial capital was largely unquestioned. The only issue was how to divert more of that capital for ‘positive’ uses. Spurred by a grassroots’ local economy movement, interest in impact investing is now multiplying rapidly. The challenge of translating impact investing into tangible, measurable advances at the community level is bringing professionals and non-professionals together to explore the meaning and purpose of investment.² A more ecological way of thinking about investing is dismantling the old silos of interest and catalysing an outpouring of creative, unorthodox investment models and partnerships that would have been inconceivable within the old investment paradigm.

For many building industry professionals, the world of ecology and living systems can seem dauntingly complex. The innovations emerging from impact investing illustrate that the inclusion of ecological thinking does not require everyone becoming an expert in the discipline of ecology. Impact investing innovators striving to apply ecological thinking to the design of new investment models are making up the design process as they go. In contrast, net-positive can draw on a number of methods and practices that have emerged over the last few decades from within what David Orr (Orr 1992) called ecological sustainability (in contrast to technological sustainability). Grounded in the belief that sustainable living is rooted in a deep understanding of place, these methods have allowed the application of key concepts and principles drawn from living systems and utilized

by applied naturalists and ecological systems experts to shape design and construction processes for years. For example, regenerative development, regenerative design and integrative design processes use ecological thinking to guide a collective discovery process. The intention of this process is to develop a deeper understanding of how a project's context works as a living, multilayered whole when it is healthy, what is currently depleting its health, and the unique value-adding role the project can play in contributing to conditions that can restore and enhance that health (Mang & Reed, 2012).

How would ecological thinking shift the way building industry professionals think about adding value to ecological systems? One shift directly relevant to determining how to add value has to do with the idea of causation. Gregory Bateson (Bateson 2011) noted that in order to think ecologically, a shift is needed in the way people are trained to think about causation. One of the best-known and clearly documented examples of why is what happened in Yellowstone National Park in the United States when wolves were reintroduced in 1995 after a 70-year absence.³ Within a surprisingly short time, valleys and gorges started to regenerate and bare valley sides turned into forests of cottonwoods, aspens and willow. In some areas trees quintupled in height in less than six years. Populations of songbirds, beavers, muskrats, fish and reptiles multiplied. Hawks and eagles as well as bears showed up in greater numbers. Even the physical geography and behaviour of the river changed to support more life. The wolves 'caused' these changes, but not in the linear way that traditional thinking posits about cause. Instead, the wolves are living out their role within that ecological system.⁴ In an ecological system, one species fulfilling its role enables all the other species to play their roles, even those where there is no direct connection. The value of a role in an ecological system derives not from how something functions, but rather from the pattern of relationships that enable particular exchanges of value.

Thinking of causation in this way, building industry professionals would ask very different questions. For example, instead of starting with the building and what surplus it can generate, a designer would start by asking what ecological services have been disabled in this place and what roles are missing that enabled those services in the past. Instead of asking how to deploy any excess in order to add value, a designer would ask what is the *role* of this particular project and the land it occupies in the larger systems of its place. How does its role enable other entities to play their roles? What are the patterns of relationships that need to be established or re-established between the building, its occupants and its community to enable their positive roles reciprocally? And then,

what specific 'positives' can this project offer and/or catalyse.

Design, construction and ongoing management processes that integrate these kinds of questions can become educational vehicles for the design team, the client and community stakeholders. Situating a building's role within the ecology of its place requires a different way of thinking to understand it. It must be conceived as an ongoing process as well as a structure that, like the example of the wolves, has wide-ranging systemic implications for shifting patterns of behaviour in a positive way far beyond its immediate physical sphere. It is an example of the nature of ecological thinking described by Orr 20 years ago as 'the ability to comprehend patterns that connect, which means looking beyond the boxes we call disciplines to see things in their larger context' ... to see 'the larger patterns and flows' that then inform human purpose (Orr, 1994, p. 108). Performance targets then grow out of a much broader-based understanding of opportunities for synergy that are specific to the role a project can play in the evolution of its place.

Buckminster Fuller thought of himself as a designer, and the process of change as a question of design. He believed that the only way to change things was to build a new model that made obsolete the existing model.⁵ The example of impact investing demonstrates how a new and very small sector within the investment industry is shifting the conversation in surprising quarters; doing so by bringing in new ways of thinking. Net-positive design has the same potential – provided that value is understood in the context of place, time and relationships within the whole living system within which the project plays a role.

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Endnotes

¹Call for papers, special *Building Research & Information* issue on net-positive. <http://www.tandf.co.uk/journals/cfp/rbricfp.pdf>

²Place-Sourced Impact Investing: Investing as an Instrument for Community Transformation. http://storyofplace.org/SF_Impact.html

³Ecological Benefits of Wolves, Sierra Club Wyoming Chapter. <http://wyoming.sierraclub.org/ECOLOGICAL%20BENEFITS%20OF%20WOLVES.pdf>

⁴How Wolves Change Rivers (video). <http://www.wimp.com/wolvesrivers>

⁵Fuller, R. B. (January 20, 1975) 'Everything I Know' – session 01. <http://bfi.org/about-fuller/resources/everything-i-know/session-1>