02. Contextualizing circularity in the architectural discourse

Green by Design

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Green by design marks the need to design systems that allow people, companies and institutions to use materials and energy consciously and sparingly and do not depend on producing waste. In other words, to develop systems that are by design energy neutral, that involve local communities and cultures, and that avoid wasteful travel and transport.

Starting with the oil crisis of the 1970s, sustainability discussions have come to the fore. The publication of the "Limits to Growth" report that predicted a global economic collapse by roughly 2070 fuelled the search for more sustainable development. The 1972 United Nations Conference on the Human Environment led to the drafting of a number of actions and the creation of the United Nations Environment Programme (UNEP). In 1987, the Brundtland report (also known with the title "Our common future") first identified the principle of sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own need." In 1992, twenty years after the 1972 conference, the Earth Summit in Rio de Janeiro further established that sustainability relies on balancing the environmental domain to the economic and social domains, which was at that time a revolutionary thought.

The built environment plays an important role in this field, but so far, efforts at sustainability have not yet come together in a convincing way.

The rising cost of oil in the 2000s generated greater interest in green building. Books such as "Cradle to Cradle: Remaking the Way we Make Things" by McDonough and Braungart aimed at new sustainable values and practices. Prefab Green by Kaufman and Remick, and Green Urbanism by Beatley aimed to promote designerly interventions. The politicization of climate change in the mid-2000s added fuel to the seeming-imperative of sustainability, and environmental stewardship has become a criterion of any corporation's ethical worth. Furthermore, the 2015 Paris Agreement marked the first ever legally binding international treaty on climate change requiring all parties to develop "nationally determined contributions" (NDCs). Meanwhile, Agenda 2030 issued by the United Nations issued on the same year, further consolidated the 17 sustainable development goals (SDGs) to accelerate climate actions and progress towards a "just" transition.

New accounting systems for sustainable building emerged in the 1990s, such as the LEED, and later BREAM or today Level. These systems are based on new ways of accounting for locally sourced materials, reduced consumption of energy or water. These practices are adopted in diverse ways around the globe with varying success. In

the United States, for example, LEED certification is often seen as a way to create models that have a trickle-down effect. In European countries, policy making can have a top-down effect.

Not all proposed approaches have been successful: concepts such as the passive house require buy-in and can have contrary effects. Many technological solutions, such as solar panels and electric cars, require raw materials that have to be sourced in far-away regions, such as in Africa. Concepts for so-called smart cities, require fuels like hydrogen that need to be transported around the globe. They also depend on energy-intensive data systems.

Movements like the *New Urbanists* bring back the concept of walkable cities once again, using architectural design and aesthetic qualities to increase walkability. In the Netherlands or Germany, bikeable neighbourhoods, housing with little available parking, slow cities (citta slow) and other movements aim at changing lifestyles. Neighbourhoods like Vauban in Germany with bike paths and passive houses have become international models. However, their success is often local and can even create social injustice. And what is more, these projects may have an impact on walkability at the local level, they don't solve the problem of long-distance driving. Competitions like the Luxemburg in 2050 one, which promote a new approach to spatial planning aimed at energy neutrality. Strategies discussed by transdisciplinary teams, including one led by the Dutch MVRDV, entitled *Beyond Lux(e), Towards Ecotopia*, include proposals for rethinking land use and land ownership, food production and mobility.
What these initiatives represent is a need to rethink our practices in a *systemic* manner. Changes in economies, behaviors, and values bring with them new spatialities. Transitioning to sustainable modes of living requires that we think across all scales and aspects. But we also need to reflect on the role of the architect for achieving this. How will architects influence the transition?