

Environment by Design

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As architecture continues to be a target of environmental reform, the ambitions of the discipline have shifted from a modernist notion of being able to *design the environment* to a subservient role as part of an *environment by design*. In this realignment, architecture's relationship to the environment has generally unfolded along two parallel tracks from the early 1980s onwards. The first, advancing a combination of building and technology, leads to a sub-category of architecture devolving into a kind of techno-science, more commonly known as "green architecture," or perhaps more accurately "green building." The second, evolving through a combination of architecture and landscape, has seen architecture gradually become absorbed by or expanded into landscape practices. In both trajectories, a form of de-disciplining of architecture takes place: either into *specialization* – the sustainable sub-culture where technology can apparently solve all problems – or *hybridization* – where architecture is no longer considered adequate on its own. In other words, a de-disciplining takes place by shrinkage or alliance.

ARCHITECTURE AND TECHNOLOGY

The premise of architecture's enviro-technological trajectory, a path indebted to the natural sciences and to a deeper disciplinary history dating from the late 1960s and early 1970s is that technological applications – e.g., solar panels, photovoltaic cells, rainwater tanks etc., – can address environmental concerns through a building's performance.¹ Driven by the notion that architecture should now do its ameliorative bit for the environment, "sustainable design" or "green architecture" – the latter referring specifically to "the physical manifestation of environmental aspects in architecture"² – have become movements that, as Australian design

theorist Tony Fry argued of the sustainability movement in general, are typically "constituted as a discourse within the realm of technology," a discourse first deemed as the outcome of "application technologies" and second "as a metaphysic that installs a techno-functionalist way of viewing the world."³ In this way, a dimension of architecture had been transformed into an environmental techno-science.

Of course no mention of technology in relation to the environment can begin without reference to the contributions of R. Buckminster Fuller and Reyner Banham during the late 1960s and early 1970s. One set of beginnings can be seen in the comprehensive design thinking of Fuller, particularly in his *Operating Manual for Spaceship Earth* of 1969. In this small book, Fuller gives a top-down, comprehensive diagnosis of the planet, one that he would parenthetically rename as "Poluto," and one that he understands as a complete environment system.⁴ In an extension of modernist thinking and top-down planning, Fuller replaces the city with the world, where design – understood as a mission indebted to technology – should assume the task of generating advantage over adversity via "accelerated scientific development" and systematic use of the computer.⁵ Fuller called this design-science.

A second underpinning, and one more directly related to architecture appears in Reyner Banham's *The Architecture of the Well-Tempered Environment* also of 1969, a book about the then under-rated history of mechanical and lighting services. According to Banham, the directive "[n]ever mind all that environmental rubbish, get on with your architecture"⁶ issued by those teaching architecture in British schools during the late 1960s, was cause for concern. Grumbling

about the failure of the architecture profession to assume adequate responsibility for environmental design in the book's introductory "Unwarranted Apology," Banham argued that such neglect had led to "another culture" consisting of plumbers and engineers appropriating the enviro-design field. In answer to what he saw as a problematic separation between architecture and technology vis-à-vis a building's performance,⁷ Banham sought to reposition mechanical services and other environmental technologies to the center of the discipline. Yet, what Banham then diagnosed as an under-rated *disciplinary* problem for architecture has since become an *overzealous building-science* problem, one often devoid of disciplinary concern, and one that has begun to subsume architecture.

Two of the clearest and most consistent articulations of the relationship between technology, architecture and the environment in the wake of Banham and Fuller, come from Malaysian architect Ken Yeang's research into "bioclimatic skyscrapers" in south-east Asia from 1981 onwards and, in the USA, from architect William McDonough's use of "sustainable materials and systems" in buildings and roofs dating from 1984 onwards. Yeang's theoretical position resonates with Banham's enviro-science ambitions – "the design of energy-efficient enclosures has the potential to transform architectural design from being an uncertain, seemingly whimsical craft, into a confident science"⁸ – and Fuller's comprehensive design thinking – "this energy equation in design is only part of a greater gestalt in environmental design."⁹ From his Plaza Atrium in Kuala Lumpur (1981-1986), to Menara Mesiniaga in Selangor (1989-1992), Yeang's tall buildings have responded to tropical climate conditions through a combination of integrated vegetation in buildings, deep air zones and wind-leeward facades. Closing what was for Banham a problematic separation between architects and "another culture," Yeang offers an inbred version that closes the architecture – technology gap: environmental design *as the core* of architecture.

Laying out "Design Principles" in a series of cartoon-like diagrams in his book *Bioclimatic Skyscrapers* of 1994, Yeang provides an outline of the role technology can play vis-a-vis architecture and the environment. Beginning with a number of drawings explicating the performance of external walls – "environmentally interactive walls," the at-

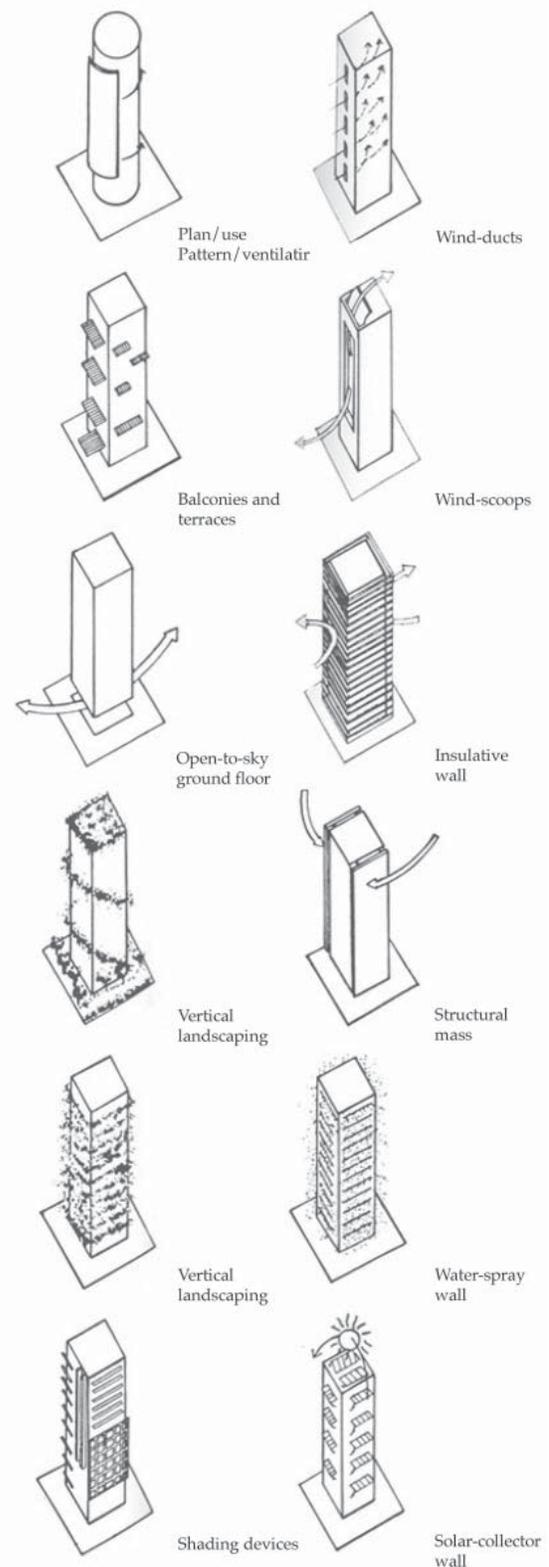


Figure 1. Ken Yeang, "Design Principles," 1994.

tachment of “shading devices,” balconies, terraces and vertical landscaping to walls, “insulative walls,” “solar-collector walls,” and “water-spray” walls – Yeang’s principles translate into building facades as either “clad in a ventilated rain-check aluminium skin which traps heat and dissipates it”¹⁰ (Menara Boustead, 1986) or window areas whose “faces have external aluminium fins and louvers to provide sun shading” or “glazing details [that] allow the light-green glass to act as a ventilation filter.”¹¹ (Menara Mesiniaga). Motivated by the natural sciences, Yeang’s design principles expose technology reduced to a wall application, and architecture as a specialization indebted to climatology.

In a slightly different approach, William McDonough, the sustainability poster-child who brought “ecologically intelligent design” to the mainstream through co-authored books such as *Cradle to Cradle* (co-written with chemist Michael Braungart in 2002), has continued a “design-science” agenda through explicit attention to the micro-technical properties of building materials. In his earliest project, the executive headquarters for the Environmental Defense Fund in New York (1984-1985), a project that McDonough himself described as “the first of the so-called green offices,”¹² McDonough’s internal environments reveal architecture and technology as an extension of materials science. For example, of selecting interior finishings for the building he writes: “[o]f particular concern to us were volatile organic compounds, carcinogenic materials, and anything else in the paints, wall coverings, carpetings, floorings, and fixtures that might cause indoor air quality problems or multiple chemical sensitivity.”¹³ Via the curation of materials, McDonough collapses architecture and technology into a veneer – a normative *surface* strategy (as opposed to Yeang’s “wall” strategy) or techno-appliqué – where selected materials are applied to planes in accordance with enviro-performance ratings.

McDonough’s investment in surface and performance was exacerbated in a pallet of roofing materials for his retrofit (in collaboration with William Worn Architects) for a green roof for Chicago’s City Hall in 2001. Of green roofing in general he writes “[i]t maintains the roof at a stable temperature, providing free evaporative cooling in hot weather and insulation in cold weather, and shields it from the sun’s destructive rays, making it last longer. In addition it makes oxygen, sequesters carbon, cap-

tures particulates like soot, and absorbs storm water. [...] In appropriate locales, it can even be engineered to produce solar-generated electricity.”¹⁴ Here, instead of perceiving vegetation as a medium of “landscape,” McDonough conceives vegetation as just another technological surface, an applied infrastructure, now curiously capable of generating solar-electricity. In this context, architecture is reduced to technological surfaces and performance criteria that no longer serve the discipline per se, but rather the über-category of “environment.”

The problem engendered by the techno-science trajectory to date – whether it be latent in the wall strategies of Yeang or manifest in the surface strategies of McDonough – is one that has seen a dimension of architecture privilege applied scientific solution over socio-cultural projection or formal innovation. It is therefore no surprise that such investments have seen their share of critique emerge from within the design fields, leaving many wondering if perhaps Banham’s professors were right after all when they instructed “never mind all that environmental rubbish, get on with your architecture.” Arguably one of the earliest critiques came from (Italian) engineer and design theorist Ezio Manzini in 1992, who stated that the role of design culture should not be a technological pursuit, but one that should rather “advance a plurality of possibilities.”¹⁵ Manzini writes:

If science and technology march under the banner “everything is possible,” design culture must [...] point out a path for these potential possibilities, a path that can be completely opposed to that which technological-scientific development has followed up to now, a path whose scenarios prefigure results.¹⁶

Manzini’s call for design culture to privilege a speculative agenda over a technological one was recently echoed inside architecture circles by founding SITE Inc. member James Wines who, in his introduction to *Green Architecture* (2000), argued that the use of advanced technology in architecture for environmental solution had tended to isolated the “means from the mission.”¹⁷ By “mission,” Wines referred to the “conceptual, philosophical and artistic” ambitions of the discipline that he claimed were being lost in the wake of technological “means” – his book was a subsequent attempt to reframe sustainable architecture through conceptual aspects.¹⁸ If architecture’s role used to lie in producing ideas and possible worlds for the environment during modernism (i.e., a prognostic role), the assess-

ments of Manzini and Wines suggest that architecture has since been subsumed by a larger design world that aims to *solve* environmental problems (i.e., a reactive role). In this scenario, architecture is apparently able *to do everything* in direct proportion to its inability *to think anything*, the conflation of architecture and technology giving way to internal specialization, paradoxically a focus to which Fuller (perhaps the most significant techno-enviro promoter) was always adamantly opposed. Significantly, this convergence has eroded architecture's capability to produce socio-cultural design possibilities and alternatives.

ARCHITECTURE AND LANDSCAPE

In parallel to the "technological" trajectory, architecture's relationship with the environment would unfold along a second path from the early 1980s onwards through its connection to landscape. This landscape path, a course that might be described as more "culturally" inflected due to its indebtedness to a longer disciplinary history of modern urbanism and landscape architecture,¹⁹ reveals a changing relationship between architecture, landscape and the environment initially through selected projects by SITE Inc. (Sculpture in the Environment) and Argentinean architect Emilio Ambasz. Deploying vegetation as a physical material equivalent to artifice – i.e. the *contents* of landscape (understood here as plant-life and earth forms) and architecture being viewed as co-equivalent²⁰ – both architects variously deployed landscape as a medium through which to *communicate* or *re-invent* the environment. A closer look at some of their projects provides an architectural background to the disciplinary re-alignments that later took place between architecture and landscape during the 1990s.

Three of SITE's "BEST" showrooms designed between 1978-1980 – the Terrarium, Rainforest, and Forest showrooms – are exemplary in their use of vegetation and soils as a medium of environmental communication. In a literal and visual extension of the surrounding environment, SITE's unrealized "Terrarium Showroom" (1978) for San Francisco proposed using "the volume of earth excavated during foundation preparations as the iconography of the finished building."²¹ Located on a visible plateau near a major highway, a generic showroom box was wrapped in an earth sandwich – an 8-inch gap between external glass and the showroom's masonry

walls was "filled with earth and rock, approximating the actual strata of the area" while the entire roof was "covered with regional vegetation"²² Using landscape as both a sign and explicit symbolism in Venturi and Scott Brown's "decorated shed" sense, the applied ornament of earth imagery sought to communicate a "live" geological history, SITE writing that "as small plant life takes root in the walls, the building will acquire a mutable iconography."²³

In the "Hialeah Showroom" (1978-1979) or Rainforest Building in Miami Florida, SITE emphasizes "the natural environment of Florida" by again grafting landscape into an enclosed façade at the front of the store:

The entire façade of the structure represents a microcosm of the surrounding landscape – including water, vegetation, sand, earth, and rock. This has been accomplished by enclosing the façade in a wall of glass. This transparent skin supports a continuous waterfall from the roof level and contains the landscape elements. The resulting effect is intended to function as a 'living iconography.' Contrary to the traditional use of sculpture and decorative accessories, the imagery of the Hialeah Showroom is both mutable and evolutionary.²⁴

Here the showroom is treated as an extension of the surrounding landscape: the building no longer integrating nature, but rather *nature integrating building*.²⁵

While the Terrarium and Hialeah Showrooms deployed earth and vegetation as a kind of wall appliqué (recalling the technological applications of Ken

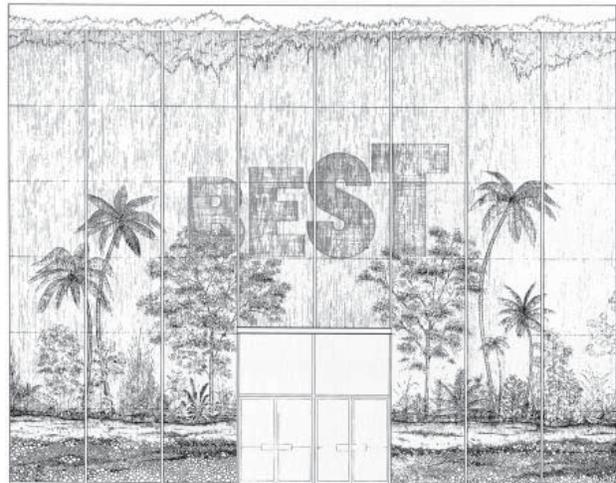


Figure 2. SITE, *Hialeah Showroom*, Miami Florida, 1978-1979. Front Elevation.

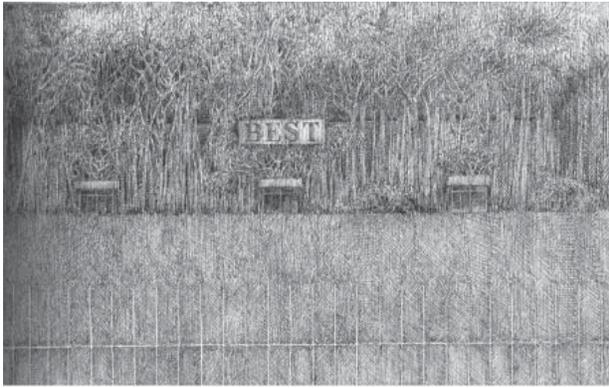


Figure 3. SITE, *Forest Showroom*, Richmond Virginia, 1978-1980. Front Elevation.

Yeang), SITE's "Forest Showroom" (1978-1980) in Richmond, Virginia assumes a slightly different role. Located in a suburban site where the building threatened to destroy existing trees, SITE allows the forest "to actually penetrate and envelop the showroom" through a fissured building where trees invade its open cracks. Here SITE conceives "nature" not as something re-sampled or recast as a sign à la the decorated shed, but rather something to be *preserved*, hyperbolized even, to give the appearance of architecture being "invaded and consumed by nature."²⁶

SITE's three BEST showrooms reveal landscape to be an extension of architecture, "contrary to its usual role as a peripheral and manicured after-the-fact accessory."²⁷ Treating the showrooms as existing "ready-mades," SITE's treatment of the generic box was a continuation of their conceptual and environmental strategies for architecture during the 1970s that understood buildings as "environmental sponges" capable of absorbing imagistic cues from the widest possible range of contextual sources.²⁸ By shifting the emphasis from formal concerns to those of information and commentary, these early projects of SITE rejected the Modernist tradition of *architecture as design* in favor of *architecture as art*. According to SITE, "[a]rchitecture as art suggests *content*, whereas architecture as design favors *purpose*."²⁹ In the context of "architecture as art," landscape is understood as a *communication* medium, rather than a performative one (i.e., architecture as design).

Yet, this landscape role shifted from communication to *performance* from the early 1990s onwards, where SITE's position vis-à-vis the role of land-

scape can already be seen to alter in their lifted landscape of "Avenue Five" for Seville's World Expo in Spain (1992). According to James Wines, this project aimed to provide "a maximum of shade and demonstrate a successful example of aesthetic decisions that grow directly out of incorporating nature's own green technology." As such, "Avenue Five stands out as an excellent example of SITE's continuous endeavor to interpret 'art as a condition of climate control.'"³⁰ This bizarre recasting of "art as climate control" is just one of a number of retroactive re-positionings Wines was to make of SITE's earlier projects. In *Green Architecture*, Wines subsequently recasts several of his earlier projects as examples of green architecture in a "cultural context."³¹ This trend continues into 2005, where Wines retroactively writes of SITE's Rainforest Showroom: "The building also represents an early use of vegetation and water as cooling elements in architecture, which led to SITE's increasing commitment to green design."³² This realignment of SITE's projects at the service of the environment registers the shift from understanding landscape as a rhetorical device of communication to a performative one now in the service of "architecture as design."

If the earlier work of SITE reveals landscape as a form of communication and the later as a condition of environmental performance, the work of Argentinean architect Emilio Ambasz who, having spent much of his career producing hyper-designed landscapes that integrate architecture, demonstrates another landscape attitude: landscape as a design medium through which to *re-invent* nature and artifice. Of particular interest is Ambasz's "Green Town" proposal for Japan in 1992 because it captures so many of his earlier design concepts in one project. Asking the formal color question "Why not green over grey?" Ambasz proposes a "soft over the hard" (vegetation over buildings) concept for 25000-30000 inhabitants to go "beyond the house in the garden" to achieve "the house *and* the garden."³³ The Green Town is imagined to consist of a collection of his earlier projects: the multi-tiered vertical garden consisting of an "ivy covered structural grid containing a potted plant in each module"³⁴ planned for the Nishiyachio Station train station; the Fukuoka International Prefectural Hall building (also of 1992) whose terraced façade was festooned with gardens; and the interior winter gardens atriums and below ground architecture of his Phoenix Museum of History. Here Ambasz seeks a new definition

of “man-made nature” where garden and building combine to “return to the city the very land it took away.” Of this collapse, Ambasz writes that “[s]uch a definition would have to incorporate and expand not only on the creation of gardens and public spaces but also on the creation of architecture which must be seen as one specialized aspect of the making of man-made nature.”³⁵ In this last quotation, Ambasz reveals his predilections not only for *architecture to disappear* but also for the absorption of architecture into new artificial natures.

Just as Wines recast his earlier SITE projects under the rubric of “green architecture,” so did Ambasz, who recently stated: “I know it sounds presumptuous, but I lay claim to being the precursor of current architectural production concerned with environmental problems. [...] It has taken me thirty years to prove the practical advantages of my ideas. [...] To see Renzo Piano, Jean Nouvel, Tadao Ando, and many others utilize vegetal matter in their projects makes me feel my mission is beginning to bear fruit.”³⁶ This claim to be a forerunner,

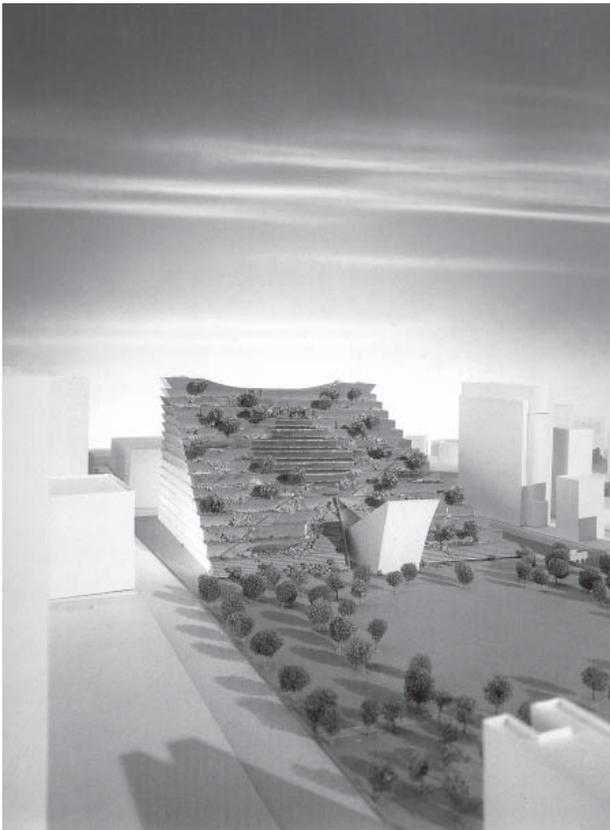


Figure 4. Emilio Ambasz, *Fukuoka International Prefectural Hall Building*, Fukuoka Japan, 1992.

an originator even offers yet another example of the way in which the cultural project of landscape was re-positioned into an *environment by design*.

During the mid 1990s, and after the projects of SITE and Ambasz, disciplinary discourses reveal a change in the status of landscape, initially acting as a medium *for the ends of* architectural design, to a practice increasingly capable of *subsuming* architecture. This shift, which was really an inversion of the architecture to landscape relationship, altered the status of landscape as a *communicative* medium as per the early work of SITE into what Rem Koolhaas labeled an *ideological* medium in his essay “Singapore Songlines” of 1995:

Worldwide, landscape is becoming the new ideological medium, more popular, more versatile, easier to implement than architecture, capable of conveying the same signifiers but more subtly, more subliminally; it is two dimensional rather than three-dimensional, more economical, more accommodating, infinitely susceptible to intentional inscriptions.³⁷

In a more explicit phrasing, Koolhaas’ backgrounding of architecture – seen as a less productive terrain than landscape – offers a more extreme version of Ambasz’s simple absorption of architecture as a specialization of “artificial nature.” What Koolhaas seems to suggest is the very possibility that architecture could be superseded by landscape. This idea was subsequently developed in the writings of landscape architect James Corner and architect Charles Waldheim in 1997. Writing from the viewpoint of landscape, Corner observed “certain elements within each of the design professions – architecture, landscape architecture, urban design, and planning – [were] moving toward a shared form of practice, for which the term landscape holds central significance, as described through the formulation of *landscape urbanism*.”³⁸ From the viewpoint of architecture, Waldheim argued the necessity of the new cultural discipline “landscape urbanism” precisely because of architecture’s failure to address contemporary urban conditions.³⁹ If Waldheim suggests the *absorption* of architecture into landscape urbanism and Corner its *hybridization*, Anthony Vidler offers a third interpretation after Rosalind Krauss’s 1979 essay “Sculpture in an Expanded Environment”⁴⁰: architecture’s *expansion* into landscape. Whether subsumption, hybridization, or expansion, the strategies are an admission that architecture can *no longer do everything* nor is it any longer *adequate on its own*.

As green and environmental design gathered momentum from the 1980s onwards, architecture has continued to de-discipline along two paths. The first unfolds via *shrinkage*: the conflation of architecture and technology giving way to internal *specialization* – paradoxically a focus that Fuller (perhaps the most significant techno-enviro promoter) was always adamantly opposed to. The second unfolds via new *alliances*: either via the absorption or expansion of architecture into landscape diffusing architecture's specificity and paradoxically realizing Fuller's ambitions for a design *generalization*. In both cases, (technology and landscape) the convergences have eroded architecture's capability to produce socio-cultural possibilities and alternatives.⁴¹ And so the question remains whether architecture might work in more conscious and alternative terms *between* the techno-scientific project that runs the risk of completely de-disciplining architecture into a form of techno-application and the disciplinary fusion of architecture and landscape where architecture equally runs the risk of completely surrendering its design specificity to amalgamated and less articulated practices.

ENDNOTES

1. Within architecture, R. E. Somol was one of the first to identify an alliance between a technological trajectory and sustainability. In 1993 he writes "the discourses of technology and commodity" had promoted themselves "as the movement for sustainability and community [...] Despite its claim to formal neutrality or disinterest, this renewed if self-serving alliance of the building and behavioral sciences (now expanding technology into the landscape and the examination of users beyond the given program) has nonetheless enforced a consistent (and constrained) form and vision." See R. E. Somol, "The Camp of the New" in *ANY* 9 (May|June 1993): 55
2. Wendy Meguro gave this definition in an interview with Jordan Kauffman in "To LEED or Not to Lead" published in *Log* 8 (Summer 2006): 13
3. Tony Fry, "The Sustainment and its dialectic" in *Design Philosophy Papers* (Ravensbourne, Australia: Team D/E/S Publications, 2004): 33. For these reasons, sustainability, as Fry argues, was reduced to "instrumental action," giving rise to categories such as sustainable architecture, engineering, and agriculture.
4. R. Buckminster Fuller, *Operating Manual for Spaceship Earth* (New York: Pocket Book edition, 1970): 70. This book was first published by Southern Illinois Press in 1969.
5. See Chapter 8 "The regenerative landscape" in Fuller (1970): 104-120.
6. Reyner Banham, *The Architecture of the Well-tempered Environment* (London: The Architectural Press, 1984) First Edition, 1969: 11. This sentence reappears in a slightly different version almost twenty years later as "Don't bother with all that environmental stuff, just get on with the architecture!" in Banham's, "A Black Box, the secret profession of Architecture," *A Critic Writes, Essays by Reyner Banham* (Berkeley and Los Angeles: University of California Press, 1996): 295. This essay was first published in *The New Statesman in Society*, 12 October 1990.
7. Banham complained that the book was filed under "technology" rather than architecture in the school libraries, writing "[t]he idea that architecture belongs in one place and technology in another is comparatively new in history, and its effect on architecture, which should be the most complete of the arts of mankind, has been crippling." Banham (1969): 9
8. Ken Yeang, *Bioclimatic Skyscrapers* (London: Artemis, 1994): 17
9. Yeang (1994): 17
10. Yeang (1994): 43
11. Yeang (1994): 59
12. William McDonough & Michael Braungart, *Cradle to Cradle* (New York: North Point Press, 2002): 8
13. McDonough and Braungart (2002): 8-9
14. McDonough and Braungart (2002): 83
15. Ezio Manzini, "Prometheus of the Everyday: The Ecology of the Artificial and the Designer's Responsibility" in Richard Buchanan and Victor Margolin *Discovering Design* (Chicago: The University of Chicago Press, 1995): 239. This paper first appeared in *Design Issues* 9, no. 1 (Fall 1992): 5-20
16. Manzini in Buchanan and Margolin (1995): 237
17. James Wines' *Green Architecture* (Milan: Taschen, 2000): 11. Wines went as far as to say in the book's concluding chapter that "environmental architecture has become a camouflage to justify the work of some vociferously righteous, but very bad designers." Wines (2000): 227
18. As Wines writes in the book's introduction: "[w]hile there are many publications today that cover the scientific and technological side of the eco-design revolution, this book approaches the subject from a conceptual,

philosophical, and artistic perspective." Wines (2000): 9. Additional criticisms of the technological trajectory can, for example, be found in: Rosalie Genevros's preface to Buchanan's *Ten Shades of Green: Architecture and the Natural World* (New York: The Architectural League of New York, 2005): 4-5; Michel Shellenberger and Ted Nordhaus' essay "The Death of Environmentalism: Global Warming Politics in a Post-Environmental World" of 2004 (source: www.thebreakthrough.org; accessed March 31, 2008); Mark Jarzombek's "Sustainability: Fuzzy Systems and Wicked Problems" and Jordan Kauffman's "To LEED or Not to Lead" in *Log 8* (Summer 2006).

19. For example, a history dating from landscape architect Frederick Law Olmsted's calls to merge the built environment with the natural environment in the late 19th century through to Le Corbusier's *La ville verte* of 1933, to Oswald Mathias Ungers' (and others) "City within the City" or "Berlin as Green Archipelago" in 1977.

20. This was already pre-empted by town planner and landscape architect Ian L. McHarg who, in *Design with Nature* of 1969, looked to landscapes types and systems, and urban settlements through the viewpoint of ecology. McHarg's emphasis is on neither design nor nature, but on a combination of both and, as such, can be read as a continuation of comprehensive thinking from the viewpoint of landscape and planning. See Ian L. McHarg, *Design with Nature* (Philadelphia: The Falcon Press, 1969). For a similar, yet later position see also Kenneth Frampton, "Towards a Critical Regionalism: Six Points for an Architecture of Resistance" in Hal Foster Ed. *The Anti-Aesthetic: Essays on Postmodern Culture* (Washington: Bay Press, 1983): 16-30

21. SITE, Inc *Architecture as Art* (New York: St. Martin's Press, 1980): 31

22. SITE (1980): 31

23. SITE (1980): 31

24. SITE (1980): 31

25. Pierre Restany, "SITE: Artists of Our Time" SITE, Inc *Architecture as Art* (New York: St. Martin's Press, 1980): 7

26. SITE (1980): 30

27. Wines (2000): 110

28 Wines (2000): 14. Wines theorized this aspect of SITE's work in *De-architecture* (New York: Rizzoli International Publications, Inc., 1987).

29. SITE, Inc *Architecture as Art* (New York: St. Martin's Press, 1980): 12-13

30. Wines (2000): 112

31. Wines retroactively declared, "I now prefer to see my writing [from the 1970s and 80s] as transitional and leading toward the far more urgent challenges of an ecological initiative." Wines (2000): 14

32. In Steve Womersley, ed., *SITE Identity in Density* (Mulgrave: The Images Publishing Group Pty Ltd, 2005): 55

33. Emilio Ambasz, "Why not the green over the gray," *Domus 772* (June 1995): 83. This project was also briefly covered in "Emilio Ambasz: Garden architecture Goes to Town," *Architectural Record* (July 1991): 68-69

34. Ambasz (June 1995): 84

35. Ambasz (June 1995): 84

36. Ambasz quoted in Michael Sorkin, "An Interview with Ambasz & Emilio" in Michael Sorkin, Ed. *Analyzing Ambasz* (New York: The Monacelli Press, 2004): 205. James Wines positioned Ambasz's work as a precursor to "green architecture" too in his essay "Emilio Ambasz: Soft & Hard" in Sorkin (2004): 90-91

37. Rem Koolhaas, "Singapore Songlines" in *SMLXL* (Rotterdam: 010 Publishers, 1995): The foregrounding of landscape over architecture was earlier suggested in Koolhaas' "Atlanta" essay of 1987|1994 where he wrote "Atlanta is not a city; it is a landscape." See Koolhaas (1995): 835

38. James Corner, "Terra Fluxus" in Charles Waldheim Ed. *The Landscape Urbanism Reader* (New York: The Princeton Architectural Press, 2006): 23. Corner attributes this new term to the "Landscape Urbanism" symposium and exhibition in 1997 conceived and organized by Charles Waldheim. For Corner, "landscape urbanism" was a way to overcome "so-called 'sustainable' proposals, wherein urbanism becomes dependent upon certain bioregional metabolisms, while assuming the place-form of some semi-ruralized environment." Corner (2006): 27

39. Waldheim writes "landscape urbanism offers an implicit critique of architecture's and urban design's inability to offer coherent, competent, and convincing explanations of contemporary urban conditions. In this context, the discourse surrounding landscape urbanism can be read as a disciplinary realignment in which landscape supplants architecture's historical role as the basic building block of urban design." See Charles Waldheim, "Landscape as Urbanism" in Waldheim (2006): 37.

40. Anthony Vidler has used the term "landscape" (rather than "landscape urbanism") to describe a

dimension of architecture's expanded field. Vidler's use of the word differs from Corner's and Waldheim's in that he does not suggest a collapse of architecture but rather its extension. Citing Krauss's argument for sculpture in an expanded field, Vidler argues "[l]andscape' emerges as a mode of envisaging the continuum of the built and the natural, the building and the city, the site and the territory." See Vidler's, "Architecture's Expanded Field," *Art Forum* (April 2004): 142-147.

41. This is the subject of my forthcoming essay "Under the Cover of Green," in Dana Cuff and Roger Sherman eds. *Fast Forward Urbanism: Designing Metrouurban America* (New York: Princeton Architectural Press, 2009).