

Architecture's New Social Entrepreneurial Networks

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If the seeds of architecture's social dimension were sown in the early moments of modernity with the social utopias suggested by Fourier and Owen and nurtured by the urban utopias of Le Corbusier and CIAM, its harvest, according to early postmodern critiques, was a failure. Indeed, the roots of today's alternative design practices, activist practices, and moves toward the development of a new field of "public-interest architecture" can be found in this failure of the modernist project. As Margaret Crawford notes, the demolition of Pruitt-Igoe in 1972 "symbolically culminated more than a decade of attacks on the premises of modernism," whereupon, she states, the social dimensions of this critique went into retreat.¹ Recently, there have been new calls for understanding the social responsibility of the architect and of the projects of architecture. In reality, this interest never disappeared. Over the past forty years there has been a continual refrain—sometimes taking the form of jeremiads—for reconstituting the disciplinary, professional, and pedagogical values of architecture, often occurring in moments of economic downturn such as our own.

This paper argues that while contemporary streams of this phenomenon are part of the continuing push and pull between architecture's aesthetic/cultural proclivities and its ethical/social underpinnings, there is a distinctly new dimension to this debate and new organizations and institutions that are resulting from it. Like the shift from modern to post-modern society, the current move toward a network society² is creating a new phenomenon, what I heuristically title Social Entrepreneurial Networks (SENs) in architecture. This paper will serve to define the concept of SENs and outline a larger research

project in which I am engaged devoted to understanding their missions, organizational structures, and outcomes. It will focus on two organizations, Public Architecture and Architecture for Humanity, although in its broader formulation SENs can range from grass-roots mobilizing efforts such as Shack/Slum Dwellers International to online fora such as Urban Omnibus that organize on-the-ground meet-ups, conversations, tours, and lectures.³

Each individual word—social, entrepreneurial, and network—has its own meaning and lineage within architectural discourse, but "Social Entrepreneurial Networks" in my argument are a new rubric that unites the development of the field of social entrepreneurship and, to borrow a phrase from Manuel Castells, "the rise of the network society."⁴ SENs are forms of social practice that advance the interests and scope of architecture through global networking and entrepreneurship. As *architectural* practices, they seek to move beyond a social service approach to one that provides sustainable results and added social value through design; they also represent a shift toward new models of social engagement made possible by global movements that are linked through "the web." Through networked organizations new linkages are being made between architects and potential clients, designers and Non-Governmental Organizations, human needs and community capacities in what the author Thomas Friedman has aptly called "the flat world."⁵

For the purposes of this paper I will separate the idea of entrepreneurship from that of the network, although they are intimately linked. Further, rather than seeing the SENs in opposition to contemporary

theories of entrepreneurship and network practice in architecture, I postulate that the work of both emerges from the same conditions: the development of the "knowledge economy" and the related "networked information environment"⁶ or network society. It will be necessary to determine: what distinguishes a social entrepreneur from an entrepreneur and what distinguishes an architectural organization working as a network from a traditional architectural organization? Before doing so, I will outline a historical trajectory of social activism in architecture.

THE EMERGENCE OF SOCIAL ACTIVISM IN ARCHITECTURE

As any student of modern architecture can tell us, Le Corbusier's claims for modern architecture—architecture or revolution—were not that revolution in society would lead to a new architecture, but that through a new architecture social transformation would take place while actual revolution would be avoided. And indeed, it was—but so too were the social transformations that modern architecture and in particular, modern urbanism, were to bring about. Despite the failure of the revolution, however, there was a massive expansion of the disciplinary concerns of the architect, in particular, in housing and urban planning. Alan Colquhoun has noted three primary strains of the critique of modern architecture that emerged in the 1960s. The first was the attack on the modernist city itself, that despite its promise of social transformation it was unbuildable and destructive of existing urban centers, with high-rise public housing—one of its key social projects—one of the worst villains. The second was an "anti-modernist reaction" against a movement that had become conservative, professionalized, and routinized.⁷ The third was the critique of modern architectural theory, and in particular, functionalism and minimalism.⁷ The specifically social critique of modernism, as outlined by Crawford, was a variation on Colquhoun's triad, but while rejecting the products of modernity, it sought to recuperate its mission. As such it focused more specifically on the destruction of urban fabric and community life, the alliance of corporate architecture firms with big business and bureaucratic government structures, and the failure to adequately understand the social and humanistic dimensions of architecture.

A comprehensive study has yet to be written detailing the early strains of the social critique of

modern architecture and urbanism as it was developed within schools of architecture and by the young professionals emerging from them. Young architects not only rebelled alongside their fellow students: against the war and their universities' alliance with the war industry, the expansionist practices of universities into surrounding communities, and the increasingly bureaucratic nature of mass higher education; they also developed reactions internal to architecture and architectural education. In particular, students fought against the rigidity of the architectural curriculum and its limited consideration of urban communities and inhabitants.⁸ Numerous community-based design studios and extra-curricular activities emerged from these students' concerns, some of which, including the Yale Building Project, are still in place today. Additionally, young minority architects, concerned both with their own status as professionals and as part of empowerment movements, developed studios and workshops within urban communities. Of note were the Urban Design Development Group in Detroit, the Urban Workshop in Los Angeles, and the Yale Black Architects Workshop in New Haven.⁹

Crawford suggests that like many involved in the development of the proto-postmodern critique the "radicals," those whose critique was most positioned against the profession, retreated into the university. Her analysis ignores an important form of "alternative practice" that did emerge from the period: Community Design Centers (CDCs), which positioned architectural practice as a largely not-for-profit activity addressing needs of urban, and occasionally rural communities. Often understood as a reaction to the inner-city riots of the late 1960s, several CDCs were in place earlier. The first, Architects Renewal Committee in Harlem (ARCH), emerged in 1964 and was supported by the New York chapter of the AIA. Others followed, including PICCED allied with Pratt Institute in Brooklyn (1967) and organizations in Syracuse, Louisville, and Philadelphia, such that by the mid-1970s there were somewhere between 50 and 80 centers, some of which began to organize under the Community Design Centers Directors Association.¹⁰

The CDCs represented both a new form of practice—nonprofit—and a reform of practice—the rejection of the methodologies of urban renewal in favor of community and participatory design. However, the social activism of the 1960s was a re-

sponse not only to issues internal to architecture but to forces external to it: the decline of the American city brought about by a history of segregationist policies and the advent of a post-industrial economy. But there were also important political and economic structures that figured into their support, for example VISTA, President Johnson's War on Poverty and Model Cities program, HUD, and Community Block Grants. This moment also marks the beginning of knowledge economy and network society, with the advent of informational technologies that would alter the structure of society, culture, and the economy.

By the early 1970s individuals who were chronicling this "revolution" against modern architecture were noticing a bifurcation of its aesthetic and ethical dimensions toward architectural "jewelry" based on formalism on one side and "socially consciousness" practice on the other.¹¹ This polarity in postmodern discourse continues through today, cropping up with more or less intensity. I would argue that in this form, there is little chance that these positions can be reconciled. Although calls for social responsibility and social justice were renewed throughout the decades following the late 1960s, it is not until the late 20th century that the movement began to see a significant resurgence, resulting in new forms of practice that can be linked to new economic structures mobilized by the networking of knowledge in a global environment.

KNOWLEDGE ECONOMY: SOCIAL ENTREPRENEURS

Alan Colquhoun has noted that the idea that architecture can play a role in "revolution" is not only modern it is problematic, due to two key elements that distinguish it from other arts: it is "very expensive"—"bound to the sources of finance and power" and "its mode of reception is one of distraction"—"the architect is a mere agent."¹² Architecture's social entrepreneurs intervene in this equation by returning agency to the architect. Architects are put in the position of identifying problems and creating projects and in so doing may also identify a new audience or clientele for practice. However, while the social entrepreneur's (typically) not-for-profit status and promotion of pro-bono volunteer activity at first glance removes the architect from reliance on "finance and power" it opens up entirely new questions with regard to funding and liability.

The knowledge economy relies on entrepreneurship to identify new markets for products and clients for services; as a consequence research and technological innovation take on new roles. Citing the management consultant Peter Drucker as a source for his own definition of "Design Intelligence" Michael Speaks distinguishes problem solving, which "simply accepts the parameters of a given problem," from innovation, which "works by a different, more entrepreneurial logic whereby rigorous analysis leads to the discovery of opportunities that can be exploited and transformed into innovation."¹³ Among the features of this new design movement are the redefinition of architecture from an aesthetic to a research enterprise, the expansion of consulting services, new business models, and the exploitation of computational technologies to produce new efficiencies in design and construction. Speaks concludes: "architecture will have to evolve new forms of adaptive design intelligence that will enable it to add value and achieve competitive advantage."¹⁴ He identifies design firms as disparate as OMA/AMO, Gensler Consulting, and SHoP as design intelligence practitioners. I would add to this list architecture's social entrepreneurs.

What distinguishes social entrepreneurship from entrepreneurship is not "innovation"—innovation is the key motivator—but how "added value" is understood. As Martin and Osberg state in their important article "Social Entrepreneurship: The Case for Definition":

[T]he social entrepreneur aims for value in the form of large-scale, transformational benefit that accrues either to a significant segment of society or to society at large. Unlike the entrepreneurial value proposition that assumes a market that can pay for the innovation, and may even provide substantial upside for investors, the social entrepreneur's value proposition targets an underserved, neglected, or highly disadvantaged population that lacks the financial means or political clout to achieve the transformative benefit on its own.¹⁵

This definition is not concerned per se with the "not-for-profit" or "for-profit" status of the participants, only the recipients and results of the work. J. Gregory Dees identifies five critical criteria of social entrepreneurs. Clearly, they have a social mission and are accountable to the constituencies that they serve—criteria one and five—but pro bono work or not-for-profit status undertaken in a way that does not "pursue new opportunities," en-

gage in “innovation, adaptation, and learning,” or act beyond the capacities of “resources currently in hand”—criteria two through four—while social are not entrepreneurial.¹⁶ CDCs acting as service providers are not in and of themselves social entrepreneurial. University-based CDCs, with their ability to leverage research and knowledge production, are more likely to be. Even a design/build not-for-profit practice can be entrepreneurial if its product is innovative and value-added, for example Rural Studio’s \$20K houses inspired by Alabama’s rural development grants.

By the mid-1980s much of the Federal funding that has provided support for the early CDCs had disappeared, necessitating new, more complex and piecemeal organizational and funding structures. Recognizing this, new networks of funders, “clearing-houses,” and architects have begun to step into the gap, understanding that to advance their work, no matter who the client, design needs to be innovative, connected, entrepreneurial, and transformative. Here, I will look at two: Public Architecture (founded 2002) and Architecture For Humanity (founded 1999). Both started with a speculative, not a service perspective: John Peterson, the founder of Public Architecture looking for a competition to engage his office, Cameron Sinclair and Kate Stohr starting a competition in response to a perceived need for design intervention in humanitarian relief.¹⁷

In keeping with the tenets of social entrepreneurship, Public Architecture sees itself as a “problem identifier, rather than just problem solver,”¹⁸ undertaking design initiatives that derive from the identification of issues relevant to the public realm. Its projects focus on open space/infrastructure, material reuse, community spaces, and housing. Each project chosen has a significant research component, resolved in the form of a prototypical design solution and advanced through various modes of advocacy and outreach. As a nonprofit, Public Architecture “works outside the economic constraints of conventional architectural practice.”¹⁹ Its work started locally, in San Francisco, with projects such as an open-space strategy for South of Market and the Day Labor Station although development of the practice has brought its work to Santa Cruz to explore accessory dwelling units and Washington State to design a community center, and the temporary project “Scrap House” has led to work with the USGBC to develop a material reuse primer.



Figure 1: Public Architecture Website (www.publicarchitecture.org)

Architecture for Humanity’s work has focused on disaster relief and design competitions that address social justice issues such as health and education. It too is conceived as a nonprofit design firm that “provides professional design services to community groups, non-governmental organizations, funding agents, social entrepreneurs and other not-for-profit organizations.”²⁰ Its focus areas are “disaster mitigation and reconstruction, poverty alleviation, design innovation for at-risk populations, and addressing climate change through sustainable design” as opposed to “civic/ government, commercial development, convention/exhibition, cultural, education, health + science...”²¹ As firms such as Gensler might now list branding, consulting, and global relationships among their services, Architecture for Humanity lists development services such as the creation of community design centers, coordination of stakeholders, and identification and development of financing tools and models. The focus areas define the organization “social,” the development services “entrepreneurial.”

Among the issues I am researching is the viability of this model. Advocacy requires considerable coverage and promotion of the work. While these organizations may not engage “the sources of power and finance” in the way described by Colquhoun, clearly they are dependent on them. Funding comes from many of the same corporations who engage conventional architects as clients, but here operate as philanthropists. The foundations that support their work are not “clients” per se, but require accountability and a form of marketing known as “grant-writing.” Indeed, John Peterson advises that “forming a nonprofit organization is probably one of the *least* efficient ways for mainstream firms and professionals to do public-interest work.”²² As I will

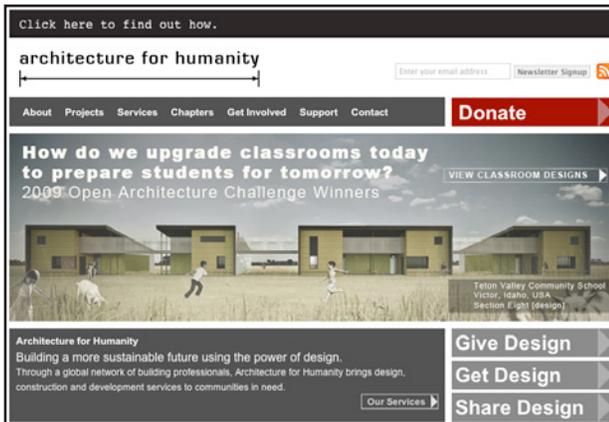


Figure 2: A portion of the Architecture for Humanity Website (www.architectureforhumanity.org)

show, a significant part of the work of these organizations is devoted to making it possible for such practices to engage public interest-activities. This is where the network takes over.

NETWORK SOCIETY: NETWORK PRACTICE

The knowledge economy cannot be uncoupled from the network society, according to Castells defined as “informational, global, and networked” and made possible by computer-mediated communication networks “characterized by their pervasiveness, their multifaceted decentralization, and their flexibility.”²³ Following these lines Speaks identifies “interlinking” as a key feature of new forms of architectural practice: “Enabled by new information and communication technologies, network practices become communities that are more powerful than any single studio or office.”²⁴ Among the practices he cites are firms such as UNStudio and one-off collaborations of architects such as the team of Garofalo, Lynn, and McInturf that came together for their Korean Presbyterian Church project in New York. But there is nothing in the definition of network practice that prevents it from being applied to the practices of a number of architecture’s social entrepreneurial organizations. Yochai Benkler, a professor of “entrepreneurial legal studies” at Harvard highlights the “social production practices” enabled by the network. It allows for “new and important cooperative and coordinate action carried out through radically distributed, nonmarket mechanisms that do not depend on proprietary strategies....”²⁵ He notes that “[w]hile the networked information economy cannot solve global hunger

and disease, its emergence does open reasonably well-defined new avenues for addressing and constructing some of the basic requirements of justice and human development.”²⁶

Networking advances the work of social entrepreneurial organizations such as Public Architecture and Architecture for Humanity beyond historic forms of social activist practice. SENs alter the way we use technology to engage with the social dimensions of architecture. Here technology is not per se part of the solution. Organizations of this kind often have an intense belief in design/build, self-help, vernacular architecture, and the use of local materials and technologies. Instead, technology is a means to build community and capacity and to deliver services: matching clients to architects, distributing solutions, and decreasing the cost of design production. In this configuration the network operates as a space for interaction, community, and the sharing of information. Here I want to focus *not* on how these organizations use the internet to advance their own projects through today’s common forms of information exchange—email, listservs, newsletters, Facebook, and Twitter, although they use all of these—but the new collaboration enabled through their own web-based venues that expand the scope of engagement with the concerns and projects of each organization.

If starting a nonprofit is an inefficient way to advance public interest architecture, what is a better means? John Peterson counsels that architecture firms pursue pro bono projects within their own communities. To advance this cause Public Architecture founded “The 1%” program (2005).²⁷ The 1% operates through a website, a portal that works both to facilitate pro bono match-ups and to highlight the results of this work. The 1% was started through funding from the National Endowment for the Arts but takes its inspiration from the Taproot Foundation, which organizes business professionals to provide pro bono services for nonprofits. Taproot lists a threefold mission: “We do pro bono; we enable others to do pro bono; we inspire the pro bono ethic.” It is the last two components of the mission that are “multiplied” through the network. In the case of The 1% the website operates as matchmaker: volunteer architectural firms can post their time commitment and services, while nonprofits can list their needs. Equally important, it offers tools that advise both architects and cli-

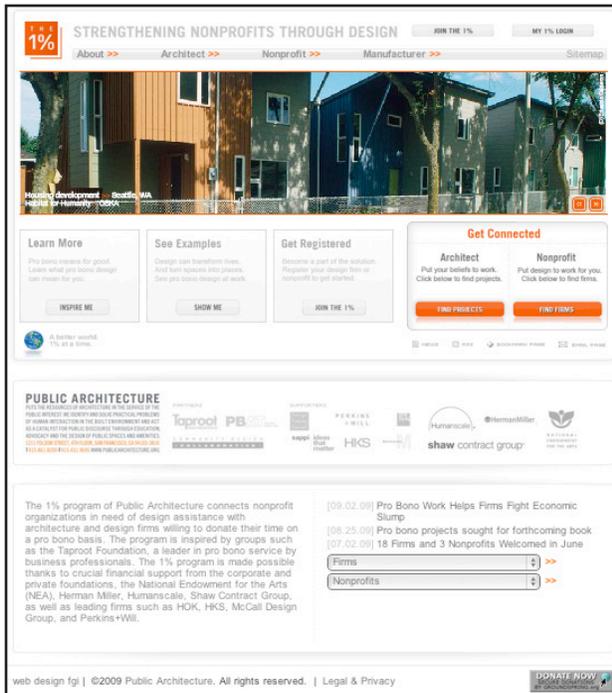


Figure 3: The 1% Website (www.theonepercent.org)

ents and promotes these endeavors by featuring examples of work. For The 1% pro bono serves a societal need but it also explicitly promoted as good business practice.²⁸ It is The 1% itself, not the firms that participate that is the social entrepreneur. What is key here is the potential multiplier effect of the website.

Architecture for Humanity also offers a matching service to firms, individuals, and nonprofits, but it also expands on the possibilities provided by the internet through open source networking. John Peterson may want to reposition architects as problem identifiers, but Cameron Sinclair has called for an all out global revolution “to improve the living standards of five billion people.”²⁹ This will come about, he believes, by changing the way architects practice, but more importantly how they collaborate and share ideas. The “Open Architecture Network” (OAN), started via a TED Prize Wish in 2006, operates as a portal for this work. Sinclair states: “The goal is that anyone on the planet can develop, share, learn, and look for appropriate design solutions. By integrating this network with disaster reporting mechanisms you can instantly access valuable information to respond to particular di-

sasters.”³⁰ The OAN currently boasts over 20,000 members and almost 4,000 projects that range from student or firm initiated unbuilt projects, to competition entries, to realized projects. Through the site one can access project descriptions, images, information on those involved, and often drawing files made available through Creative Commons licensing. It also offers a mechanism for collaboration via a workspace. While networking people into a global humanitarian architectural practice, OAN is also networking information and knowledge. It engages in peer-to-peer activity that is networked, non-hierarchical, decentralized, and distributed.³¹

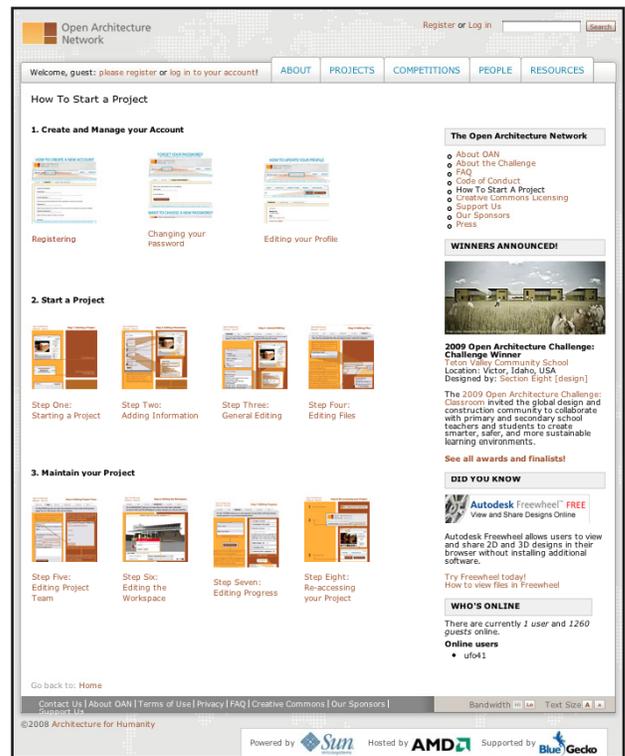


Figure 4: Open Architecture Website (www.openarchitecturenetwork.org)

Although operating through internet-based networking, both The 1% and the Open Architecture Network are promoting localized, on the ground work. On the one hand, they are creating what Benkler terms a “networked public sphere.”³² On the other, the work produced is grounded in specific communities. This is due in large part to the way in which architects themselves operate in the knowledge economy. As Dana Cuff has noted, while knowledge is an intangible, “architecture results in

a material product.³³ This embeddedness of architecture is a critical dimension in understanding how these social entrepreneurial organizations are operating as network practices. As Saskia Sassen notes regarding civil society in electronic space: "It is a peculiar mix of intense engagement with the local, with place, and an awareness of other 'local' engagements across the globe. In brief, social activists can use digital networks for global or non-local transactions *and* they can use them for strengthening local communications and transactions inside a city or rural community."³⁴ Benkler comments that these networks are not "mere overlay[s]";³⁵ what digitization that enables the network brings is "liquidity," "hypermobility," and "order of magnitude."³⁶ As with financial instruments, so too with social activism: for the network itself to be productive its net result must be an increase in production. Information flow must not just increase exchange of information, which it clearly does, but this information must produce knowledge, and in the case of architecture, either the potential for or actual artifacts or urban/spatial transformations of some kind.

CONCLUSION

The success of social entrepreneurial networks in architecture is directly tied to new ways of thinking about architecture and the role of design, not in separating out responsibility—activism, community engagement, or public interest—from the vast possibilities for design in a networked, global setting. Networking such as that described in this paper will only grow in importance to the discipline and profession of architecture in the long term. Young architects are already hooked into sites that promote discussion of new work, job searches, and competitions. They share their ideas and their work through the web and consider this a baseline for all personal and professional action. These interactions are highly interactive and opportunistic. They are often entrepreneurial, as young practitioners raised in the knowledge economy recognize the need to reshape and expand the scope of architectural practice. As a result, most young architects are already social networkers and many are well poised to become architecture's social entrepreneurs.

The principal purpose of the study is to analyze the impact of this entrepreneurial, networked activity. My extended study is looking at the relationship of network practices to more traditional CDCs, for ex-

ample if SENs mitigate some of the need for CDCs or expand the capacities of such practices. It is also looking at the "multiplier effect" by analyzing the amount of built work that results from the potential for increased interaction through internet-based networks and equally importantly, how this work evaluated by the SENs themselves. There are also more detailed questions that need to be explored such as what are the successes and limitations of Creative Commons licensing; how is liability resolved, does it promote or discourage participation in these networks? In the end, the success of the SENs is not the degree of interaction or representation in virtual space, but the quantity and quality of built work in real physical places, be they urban neighborhoods, rural villages, vast slums, or refugee camps.³⁷

ENDNOTES

1. Margaret Crawford, "Can Architecture Be Socially Responsible?" in Diane Ghirardo, ed. *Out of Site: A Social Criticism of Architecture* (Seattle: Bay Press, 1991): 27-45.
2. For a discussion of the intersection of the network and space see for example, Kazys Varnelis and Anne Friedberg, "Place: The Networking of Public Space," in Kazys Varnelis, editor, *Networked Publics* (Cambridge, MA: The MIT Press, 2008), 15-42.
3. urbanomnibus.net and www.sdinet.co.za (last accessed September 26, 2009). See Arjun Appadurai, "Deep Democracy: Urban Governmentality and the Horizon of Politics," *Public Culture* 14:1(2002): 21-47 for a discussion of "globalization from below."
4. Manuel Castells, *The Rise of the Network Society*, 2nd edition (Malden, MA: Blackwell Publishers, 2000).
5. Thomas L. Friedman, *The World Is Flat: A Brief History of the Twenty-First Century*, revised edition (NY: Farrar, Straus and Giroux, 2006).
6. Yochai Benkler. *Wealth of Networks: How Social Production Transforms Markets and Freedom Contract: Freedom in the Commons* (New Haven: Yale University Press, 2006), 1.
7. Alan Colquhoun, "Postmodernism and Structuralism: A Retrospective Glance," in *Modernity and the Classical Condition: Architectural Essays* (Cambridge, MA: The MIT Press, 1989[1988]), 243-5.
8. In the late 1960s *Progressive Architecture* followed the events both within and around American schools of architecture; see for example March 1967 and August 1969 issues. The latter contains a chronology of events.
9. *Architectural Forum* followed the new trend in community-focused workshops; see for example Jan/Feb 1969 and December 1969 issues.
10. Andy Leon Harney, "Community Design Centers in the '70s: A Status Report," *AIA Journal* 67(November 1978): 54-56. It should not be surprising that the official journal of the AIA followed these organizations and the relationship between nonprofit and "for profit" design firms. See also: Andrea O. Dean, "Community Design Centers: Practicing 'Social Architecture,'" *AIA Journal* 65(January 1976): 38-41. In *1971 Design*

Quarterly produced an issue on the larger, related topic of Advocacy.

11. C. Ray Smith, *Supermannerism: New Attitudes in Post-Modern Architecture* (NY: E.P. Dutton, 1977), 331.

12. Colquhoun, "Postmodernism and Structuralism," 243-4.

13. Michael Speaks, "Intelligence After Theory," *Perspecta* 38(2006): 103. Note, I am purposefully using Michael Speaks's and Peter Drucker's arguments in a counterintuitive manner.

14. Michael Speaks, "Design Intelligence and the New Economy," *Architectural Record* 190(July 2002): 72

15. Roger L. Martin & Sally Osberg, "Social Entrepreneurship: The Case for Definition," *Stanford Social Innovation Review* (Spring 2007)

16. J. Gregory Dees, "The Meaning of 'Social Entrepreneurship,'" May 30, 2001, www.caseatduke.org/documents/dees_sedef.pdf

17. Public Architecture provides a timeline of their development on their website www.publicarchitecture.org (last accessed September 26, 2009). For the development of Architecture for Humanity see:

Kate Stohr, "100 Years of Humanitarian Design," in *Architecture for Humanity, Design Like You Give a Damn: Architectural Responses to Humanitarian Crises* (NY: Metropolis Books, 2006), 32-55.

18. www.publicarchitecture.org/design_initiatives.htm (last accessed September 26, 2009).

19. John Peterson, "Mobilizing Mainstream Professionals to Work for the Public Good," in Bryan Bell and Katie Wakeford editors, *Expanding Architecture: Design as Activism* (NY: Metropolis Books, 2008),

20. www.architectureforhumanity.org/services (last accessed September 26, 2009).

21. The first list is from Architecture for Humanity's website, the second from SOM's www.som.com (last accessed September 26, 2009).

22. Peterson, "Mobilizing Mainstream Professionals," 102.

23. Castells, *Network Society*, 77, 385.

24. Speaks, "Design Intelligence," 72.

25. Benkler, *Wealth of Networks*, 219, 3.

26. *Ibid.*, 13.

27. www.theonepercent.org/ (last accessed September 29, 2009).

28. See for example: Raymund Flandez, "Pro Bono Work Helps Firms Fight Economic Slump," *The Wall Street Journal*, September 1, 2009.

29. The Open Architecture Network website explicitly states: "Le Corbusier had it wrong." www.openarchitecturenetwork.org/about (Last accessed September 29, 2009).

30. "Cameron Sinclair, Dan Shine: Global Network for Humanitarian Design," *A+U* 449(Feb 2008): 114.

31. Michel Bauwens, "P2P and Human Evolution: Peer to peer as the premise of a new mode of civilization," Draft 1.1 (March 1, 2005): 7. <http://noosphere.cc/P2P2bi.htm> (last accessed July 20, 2009).

32. Benkler, *Wealth of Networks*, 10.

33. Dana Cuff, "The political paradoxes of practice: political economy of local and global architecture," *Arq* 3:1(1999): 80.

34. Saskia Sassen, "Towards a Sociology of Information Technology," *Current Sociology* 50(May 2002): 382.

35. Benkler, *Wealth of Networks*, 366.

36. Sassen, "Towards a Sociology," 369. Also, Saskia Sassen, "Local Actors in Global Politics," *Current Sociology* 52(July 2004): 659.

37. Richard Rogers, "The Politics of Web Space," (2008), 12, 14. www.govcom.org/ (last accessed July 20, 2009).