

**“Food-Space-Energy Problems”:
The Rockefeller Brothers Fund,
the New Alchemy Institute, and
the Emergence of Ecological
Design in the 1970s**

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Abstract

The Rockefeller Brothers Fund (RBF) initiated its Environmental Program out of long-standing work in conservation and population in 1974. Driven by the 1973 OPEC oil embargo, famines, and the emergence of scientific research into the limits of the earth's resources, the RBF funded organizations that looked for ways to help humans live less destructively on a threatened planet. Its support helped usher in the rise of ecological design through its grant program, funding organizations focused on environmental lifestyles, agricultural practices, and renewable energy technologies. This research report explores the relationship between one such organization, the New Alchemy Institute, and the RBF during that decade. It suggests that the RBF played a critical role in providing networking opportunities and encouraging groups to strengthen their scientific investigations. While RBF support remained strong for nearly ten years, by the end of the 1970s, the Fund began looking towards "middleground" solutions to agricultural and ecological problems. It founded the American Farmland Trust in 1980 and turned most of its agricultural funding towards that institution. The RBF also increasingly sought to support international eco-development. Such changes in granting objectives pushed ecological design groups to shift away from their social critiques and towards international work and an embrace of ecological economics. The Rockefeller Brothers Fund, therefore, facilitated both the success of an alternative technology movement and aided its transition into the mainstream.

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The Rockefeller Brothers Fund (RBF) initiated its Environmental Program out of long-standing work in conservation and population in 1974. Driven by the 1973 OPEC oil embargo, famines, and the emergence of scientific research into the limits of the earth’s resources, the RBF funded organizations that looked for ways to help humans live less destructively on a threatened planet. Its support helped usher in the rise of ecological design through its grant program, funding organizations focused on environmental lifestyles, agricultural practices, and renewable energy technologies. This research report explores the relationship between one such organization, the New Alchemy Institute, and the RBF during that decade. It suggests that the RBF played a critical role in providing networking opportunities and encouraging groups to strengthen their scientific investigations. While RBF support remained strong for nearly ten years, by the end of the 1970s, the Fund began looking towards “middleground”¹ solutions to agricultural and ecological problems. It founded the American Farmland Trust in 1980 and turned most of its agricultural funding towards that institution. The RBF also increasingly sought to support international eco-development. Such changes in granting objectives pushed ecological design groups to shift away from their social critiques and towards international work and an embrace of ecological economics. The Rockefeller Brothers Fund, therefore, facilitated both the success of an alternative technology movement and aided its transition into the mainstream.

By the early 1970s, the Rockefeller Brothers Fund had long been active in funding programs focused on conservation and population. In 1974, the RBF combined its conservation and population programs into an Environmental Program.² In that year’s *Annual Report*, the RBF declared that a “paradigm shift”³ in science had taken place, as “the shocks of the recent past -- the reports of famine, evidence of

pollution, unassimilated waste, shortages of energy and other resources -- produced a new general awareness of relationships among parts of the natural system.”⁴ The Fund had therefore created a “unified environment program” since “growth of population, accompanied by increased use of resources and technology, is the biggest factor affecting the environment, which conservation seeks to protect.”⁵ In creating its Environmental Program, the RBF wanted to support organizations that were searching for “lifestyles” that could promise a shift toward an “ecological ethic.”⁶ Many of these groups were early innovators of what is now known as ecological design – technologies and architectures that take inspiration from ecological processes to provide food, shelter, and energy.⁷ In the late 1960s and early 1970s, such groups were struggling to find financial backing for their work. The Rockefeller Brothers Fund became a major donor to some of these organizations, providing crucial funds for the beginning of ecological design experiments.⁸ One such group was the New Alchemy Institute (NAI).

Worries over human impacts on the earth’s ecosystems prodded Nancy Jack Todd, her husband John Todd, and their friend and colleague William McLarney to begin the NAI in 1969. They intended for the New Alchemy Institute to “Restore the Lands, Protect the Seas, and Inform the Earth’s Stewards.”⁹ The New Alchemists wanted to design ecological solutions to humans’ “basic needs”: food, shelter, and energy. When they began their work, the Todds and McLarney were at the forefront of the ecological design movement. John Todd held a Ph.D. in Animal Communication and he had a life-long interest in agriculture, while McLarney, an ichthyologist, was in the middle of writing what would become the primary guide to aquaculture in the United States.¹⁰ With these backgrounds, they came to focus on ways to raise fish and grow vegetables and fruit in temperate climates at their research farm in Falmouth, Massachusetts. Their plan was to construct technologies that did not pollute or degrade the ecosystems humans relied upon. The New Alchemists experimented in organic agriculture, developed small-scale aquaculture systems, constructed passive solar buildings, and designed windmills. In what would be the most innovative of their work, they integrated their designs into “Arks” or “bioshelters,” passive solar greenhouses intended to provide fish, vegetables, energy, and living space for families and communities.¹¹ Marston Bates, an ecologist and mentor of Todd at the University

of Michigan, inspired these structures with his own “miniature tropical ‘rainforest’”¹² in Ann Arbor. Like the New Alchemists, Bates depicted the divide between science and the humanities a “false dichotomy.”¹³

For the New Alchemists, there existed no separation between the ecological well-being of the earth, human survival, and social equity. The question driving their experiments in agriculture, aquaculture, and energy was whether it was “possible to sustain human populations in ecologically viable ways rather than with ... capital-intensive, exploitative, wasteful and polluting methods.”¹⁴ Their vision was for decentralized communities, developing concepts of society that focused on the “micro level while maintaining a planetary perspective,” arguing that change should occur at the “lowest functional units of society, the individual, or small group, and the elements which sustain them.” They looked to food production at “a family level, which would be ecological and relatively inexpensive.”¹⁵

Before the Institute had begun any of these experiments, John Todd began promoting the Institute to funding organizations. “This letter is to introduce ourselves,” wrote Todd to the RBF, “and to inform you that we are active in aquaculture research and plan further studies in a wide variety of climates in North and Central America.” He continued, noting that they had begun the New Alchemy Institute “to permit a number of concerned scientists to help create low-cost, energy, aquaculture and agriculture systems.”¹⁶ At that time, however, the Fund chose not to aid NAI with its “biotechnic design and research programs.”¹⁷

The year 1974 proved to be of beneficence to the Institute as it became increasingly connected to funding organizations. NAI members began participating in Murray Bookchin’s Institute for Social Ecology, where Howard Odum’s arguments relating energy scarcity to agricultural collapse inspired Todd.¹⁸ The Todds also first attended William Irwin Thompson’s Lindisfarne Institute in the summer of 1974 for a gathering on “Planetary Culture and the New Image of Humanity,” where John Todd gave a talk. This meeting introduced an RBF program assistant, Michaela Walsh, to NAI’s work.¹⁹ As Walsh noted in an interview, “I was blown away by what [Bill Thompson was] doing. ... that was

when I first met the Todds. And I went back, and I was determined to see a small grant go to them. And I'll never forget. I put together 25,000 dollars, and one of the Rockefellers said, 'New Alchemy? Isn't that something out of the middle ages?' Anyway, they gave 20,000 towards it in the first grant."²⁰

Walsh became a program officer at the RBF in the early 1970s where her work focused on alternative technologies. She had spent the previous decade working for Merrill Lynch International (in Beirut from 1960 to 1965) and on Wall Street for a hedge fund, while attending night school at Hunter College, where she received her BA in 1971. She recalled "that I was on the ascending ladder for what the United States was trying to encourage, is a new global economy,"²¹ but left the world of finance for "moral reasons" in the early 1970s. An acquaintance asked if she wanted to work in the foundation world and she agreed, remembering that she "had access to all these thoughts about how the World Bank was set up and how finance is working in new ways. And I just did whatever they needed done."²²

While the Rockefeller Brothers Fund was poised to extend funds to groups such as NAI, the Institute's ability to access such funding required an emphasis on what Todd called "food-space-energy problems."²³ In a presentation to the RBF, Todd insisted that:

the ecologist, O.T. [*sic*, H.T.] Odum's recent suggestions that energy shortages in agriculture could result in severe food shortages in the not too distant future has led many to accept the fact that if food demands are to be met in the coming years, indigenous ecologically derived and low energy strategies for raising food are going to have to be developed.

When people listening questioned "the practicality of a layman attempting to construct and maintain such a complicated system as well as the basic economics," Todd insisted that "crises of world famines and energy shortages" made such work essential.²⁴

When the Rockefeller Brothers Fund awarded the New Alchemy Institute a grant of \$50,000 in November of 1974, the board's minutes linked NAI's work to problems of international food production and energy use: these "highly

respected professional scientists” were:

appl[ying] advanced concepts of science and capital-conserving construction techniques to produce an impressive array of new technology ... Through a creative synthesis of agriculture and aquaculture, the New Alchemists’ solar-heated, wind-powered farm produces a flavorful, high-nutrition yield on minimum space and at low cost for ten months of the year.

Such work promised to benefit people “throughout the world” and also fit the RBF’s Environmental Program’s goal to support “new, environmentally sound values, life styles [*sic*] and tools.”²⁵ RBF support provided NAI entry into international funding circles by introducing them to other foundations and scientists working on questions of global limits.²⁶

From the outset of the Rockefeller Brothers Fund grant, RBF officers insisted that the Institute take a more rigorous scientific approach and look for further funding elsewhere, as the economic landscape of the 1970s caused foundations’ financial stability to appear increasingly precarious. As Gerald Barney, a physicist who worked for the RBF, told Todd, “it is very important that NAI continue its efforts to broaden its base of support ...all foundations, including the RBF, have experienced a significant decline in both the value of their portfolios and what the remaining value can buy.”²⁷ The key to finding new financial support lay in the New Alchemists promoting their work as legitimate science. Barney insisted that Todd must find a way to list “all NAI publications in professional journals (so that non-scientific foundation people have some assurance that NAI does ‘science’ in a new, but legitimate, sense).”²⁸

Yet for Michaela Walsh, the personal champion of the New Alchemy Institute and other such groups at the RBF, the scientific solutions that NAI presented held potential because of the organization’s structure and the place of women at the Institute. After praising “the genuinely gentle and humane attitudes and relationships which appear to prevail among the members,” she wrote that “there can be no doubt that one of the major reasons for the successful communication of this group lies in the fact that John Todd and Nancy Todd are an exceptional couple. Individually, they represent strong personalities and they share a

leadership role which creates an equal balance between masculine and feminine elements of the Institute and its members.”²⁹ Walsh’s personal interest lay in organizing international support for women’s economic independence, a passion that took root more thoroughly when the RBF sent her to the World Conference on Women held in Mexico City in 1975. There, with women from around the world, she founded Women World Banking, a non-profit whose mission was to help women gain access to finances.³⁰

At the time of the first RBF grant, the New Alchemy Institute also pursued a major grant from the Canadian government. Canada would be hosting the UN Conference on Human Settlements in 1976, and the federal government had promised to fund projects that would showcase Canadian innovation in housing and land use.³¹ NAI wanted to become one of those demonstration projects. What the Alchemists proposed to the Canadian government was an “Ark” for Prince Edward Island, a “structure and a renewable energy system designed to sustain the food, shelter and power needs of urban or rural families.”³² The building, designed with Solsearch Architects David Bergmark and Ole Hammarlund, would contain greenhouses, aquaculture tanks, windmills and passive solar energy systems, composting toilets, and living space for a family who, ideally, would eventually make money from the agricultural ecosystem they tended.³³ As NAI wrote in a description of the project, the Ark would be able to “sustain humans at the household level”³⁴ as such a scale would be “independent of the many vulnerable components of modern agriculture.”³⁵

By April 1975, the New Alchemy Institute had secured \$354,000 from the Canadian federal government to design and build an “Ark” on Prince Edward Island. The PEI provincial government provided land.³⁶ Officers at the RBF took credit for enabling NAI to receive the grant. As Executive Vice President William M. Dietel wrote,

the Fund’s \$50,000 grant to this small research community in November 1974 appears to have been a particularly significant one since it has helped trigger considerable interest and publicity in the Institute’s work. The Canadian government has selected the New Alchemists ... to develop a new research and education center ... Since it is hoped that the project will be completed in time for ‘Habitat: The

United Nations Conference on Human Settlements,' its impact, both socially and environmentally, could be extensive.³⁷

The Rockefeller Brothers Fund was not far wrong when it suggested that the Ark's impact could be far-reaching: visitors came from across the world to see the ecological home. It also provoked intense criticism, largely due to debates over government expenditures, questions over the Ark's research capabilities, and the lack of visiting hours to the house.³⁸ During the building of the Ark, Walsh and the RBF continued to champion NAI's ecological design. Walsh visited and helped put finishing touches on the bioshelter in time for its opening.³⁹ A year later, Walsh traveled to Ottawa to discuss the criticisms with people in government, arguing in a memo that all of the complaints – such as the Ark being closed to visitors, being unkempt, and having an “absentee” landlord – were “superficial for the most part.”⁴⁰ In fact, praise for the head horticulturalist, Nancy Willis, flowed from Walsh's typewriter: “Nancy Willis is quite a remarkable woman,” she wrote, “brilliant in her articulation of the engineering design feats and the varied and extended growing seasons within the ARK. She is also keeping data on the types of food that can be grown year-round.” Walsh added, “I think her articulation of the work of the New Alchemy is one of the more exciting discoveries within the group to date for me: as a woman, as a horticulturalist, and as someone who has experienced and grown over the past year.”⁴¹ Because of this, she urged the Todds to allow Willis to stand as a spokesperson to granting agencies “outside the strictly scientific community.”⁴²

The New Alchemists in Falmouth had largely disassociated from the PEI experiments by March 1978.⁴³ While the PEI Ark faced increasing economic difficulties, the NAI continued to receive grant funding and media recognition. In 1977, it had received a grant from the National Science Foundation to model Ark system dynamics and hire a full-time systems ecologist.⁴⁴ The RBF also continued funding NAI, granting \$75,000 to be payable over three years, from 1977 to 1979.⁴⁵

The *Rockefeller Brothers Fund Annual Report* of 1979 celebrated a decade of supporting a new environmental ethic, highlighting the New Alchemy Institute in its account. According to the report, “Long before it became part of the popular

wisdom, [Laurance Rockefeller] saw the need to find productive and satisfying ways of living that place less stress on our nonrenewable resources. In the truths of ecology he found an imperative, an ethic, that requires us to treat the land, water, and air as links in a vital chain upon which life depends."⁴⁶ NAI and similar organizations, such as the Lindisfarne Association and the Farallones Institute, were the beneficiaries of the Fund's focus on groups that imagined such technological and cultural alternatives.

While the RBF continued to celebrate the work of groups such as NAI, the end of the 1970s also contained seeds of change in funding goals. The continued financial uncertainty of the late 1970s, combined with a conservative resurgence in the United States, initiated a decline in support for alternative lifestyles and technological innovations. The same held true of RBF backing for the New Alchemists. While the Rockefeller Brothers Fund had granted funding through 1979, they also initiated a review of the Alchemists' work to ask several questions about the organization: Was their science being done efficiently? Should the RBF continue its support? Additionally, such a review would be good for "nurturing the organization" in a time of change.⁴⁷

The reviewers answered these questions largely in the affirmative. But several issues that had been with NAI for years continued to plague the Institute. First and foremost among them were questions regarding the Institute's acceptance by the scientific community at large. One scientist interviewed suggested that "they extrapolate too freely," while another admitted that the "the scientific community in general does not take NAI seriously, and that this is a serious charge, an issue that NAI must deal with if it is to be effective."⁴⁸ Margaret Mead, an anthropologist, rejected these critiques, saying,

Hard scientists are hopeless. They can deal with only one dependent variable at a time. They don't understand Todd."⁴⁹ The need to prove themselves a scientific research organization clashed with NAI's insistence that they were constructing housing for the future. Indeed, the reviewers questioned just who, exactly, would benefit from the Ark concept: it needed to be shown to be possible in "a concentrated urban population."⁵⁰

“If continuing RBF support is to be justified,” the report argued, “NAI must become economically viable ... NAI will need assistance to bring costs down ... The relationship of Ark costs to ordinary home costs must be determined.”⁵¹ For the reviewers, NAI existed at the nexus of science and the economics of home food production. None of its designs would prove widely applicable without “economic viability.”⁵²

By the early 1980s, the New Alchemy Institute had shifted decisively towards agricultural research, education, and consultation. Rather than political and social reform, the New Alchemists aimed to make their technologies widely acceptable, especially to middle-class Americans. As Kate Eldred noted in an interview,

I always felt that one of the beauties of New Alchemy was that you could be middle class and still living lightly on the land.”⁵³ A member survey in 1983 indicated that this focus on practical, “self-sufficient” home and farming research was what their readers wanted; they were drawn to the “practical research approach [and that it was] not ‘cosmic/complicated.’⁵⁴

Concurrently, RBF funding shifted towards preserving agricultural lands and international eco-development. In 1980, the RBF founded the American Farmland Trust in conjunction with the Conservation Foundation, “motivated by a ‘middleground’ philosophy”⁵⁵ to find solutions to shrinking farmland and disappearing farmers. The RBF also turned to supporting eco-development, particularly in the Caribbean. While earlier grants to NAI had been for its approach to alternative lifestyles, by 1981, the RBF supported NAI because of “the strong complement it offer[ed] to both the Fund’s national farmland program and its international eco-development concerns in the Caribbean area and China.”⁵⁶

Yet these shifts, despite the potential for further support, led to the withdrawal of RBF support to NAI. “The Fund is completing a series of large capital grants which has limited our grantmaking abilities,” wrote an officer to NAI director, John Quinney. “As a result, the Fund is phasing out our support of any regional agricultural programs and our commitment to the American Farmland Trust must represent the extent of our interest in the farmland preservation area.”⁵⁷

While direct support for the New Alchemy Institute waned, nearly ten years of continuous funding had paved the way for NAI and other organizations to move into the 1980s in new forms. Members of NAI left the group to participate in the growing “green” economy, founding and working for well-known businesses such as Stonyfield Organics and Seventh Generation.⁵⁸ Others participated in burgeoning international eco-development; as historian Stephen Macekura argues, alternative ecological technologies became integral to development projects.⁵⁹

The Rockefeller Brothers Fund aided NAI through its emergence as an organization that promised new ways of living in relation to the non-human world. It did so through funding, networking, and encouraging the Institute to strengthen its scientific investigations. Despite the promise of radical realignment of human’s connection to natural systems, funding priorities shifted in the 1980s. The New Alchemy Institute was carried along on the wave, reworking its organization to focus on economic viability, agriculture, and international development. In doing so, it may have given up some of the social dreams Laurance Rockefeller imagined when he first began to promote a new “ecological ethic.”

¹ *Rockefeller Brothers Fund Annual Report, 1983*, p. 9.

² “Conservation and the Environment: RBF at 75 – Essays,” <https://www.rbf.org/75/essay-environmental-grantmaking>, accessed June 17, 2020.

³ *Rockefeller Brothers Fund Annual Report, 1974*, p. 4.

⁴ *Rockefeller Brothers Fund Annual Report, 1974*, p. 4. For scholarly interpretations of 1970s shifts, see Michelle Murphy, *The Economization of Life* (Durham: Duke University Press, 2017); Sabine Höhler, *Spaceship Earth in the Environmental Age, 1960-1990* (London: Pickering and Chatto, 2015); Stephen J. Macekura, *Of Limits and Growth: The Rise of Global Sustainable Development in the Twentieth Century* (New York: Cambridge University Press, 2015).

⁵ *Rockefeller Brothers Fund Annual Report, 1974*, p. 6.

⁶ *Rockefeller Brothers Fund Annual Report, 1974*, p. 6.

⁷ Peder Anker, *From Bauhaus to Eco-House: A History of Ecological Design* (Baton Rouge: Louisiana State University Press, 2010).

⁸ As the RBF notes in a timeline dedicated to 75 years of philanthropy, “Although NAI’s work was widely considered valuable and sound, it struggled to achieve efficiency and a broad base of financial support.” “New Alchemy Institute,”

<https://75.rbf.org/#!focus=2&trigger=new-alchemy-institute>, accessed June 17, 2020.

⁹ *New Alchemy Newsletter*, No. 1, Summer 1972, p. 3.

¹⁰ “Aquaculture,” *New Alchemy Newsletter*, Fall 1972, no page.

¹¹ See the *Journal of the New Alchemists* for reports on their work. Available online at The Green Center, <https://newalchemists.net/publications/new-alchemy-1971-1991/>, accessed June 22, 2020.

¹² *Journal of New Alchemists* 2 (1974), p. 1. Bates remains an under-studied figure in environmentalism and ecology. His work began with tropical ecology and moved into philosophical works on the relationship between humans and the non-human world, insisting that science itself needed to be seen as a humanistic pursuit. Bates spent much of his early career working for the Rockefeller Foundation’s International Health Division. The Rockefeller Foundation then provided funds for Bates to develop a course on “social ecology.” While the connections are still unexplored, it seems these early efforts relate to the social-ecological activism of the 1970s discussed in this paper. Megan Raby, “From Mosquitoes to People’: Marston Bates and the Rockefeller Foundation International Health Division,” *Rockefeller Archive Center Research Reports* (July 2, 2019). Available online, <https://rockarch.issuelab.org/resource/from-mosquitoes-to-people-marston-bates-and-the-rockefeller-foundation-international-health-division.html>

¹³ Quoted in Socrates Litsios, “Marston Bates , Visionary Environmentalist,” *Perspectives in Biology & Medicine* 60, no. 2 (Spring 2017): 206.

¹⁴ Nancy Jack Todd, “New Alchemy: Creation Myth and Ongoing Saga,” *Journal of the New Alchemists* 7 (1979): 10.

¹⁵ Todd, “The New Alchemists,” 56. Gerald Barney asked “how [could one] reconcile?” a focus on the family with something “involving large segments of society” in his marginal notes to Todd’s letter. John Todd to Gerald Barney, October 2, 1975, RBF, Projects, RG 3, Box 706, Folder 4225, RAC.

¹⁶ John Todd to James Hyde, July 12, 1971, RBF, Projects, RG 3, Box 706, Folder 4223, RAC.

¹⁷ William Moody to John Todd, August 19, 1971, RBF, Projects, RG 3, Box 706, Folder 4223, RAC.

¹⁸ Nancy Jack Todd, Preface, *Journal of the New Alchemists* 2 (1974), p. 4. According to Jack Todd’s memoir, they met Margaret Mead at Bookchin’s Institute for Social Ecology in 1975. Mead would become a mentor to the Todds, inviting them to the Pacific Science Inter-Congress on Appropriate Technology in Bali (1977). This meeting cemented the Mead’s support and inspired the Todds’ increased interest in international work. Nancy Jack Todd, *A Safe and Sustainable World: The Promise of Ecological Design* (Washington, DC: Island Press, 2005), 61, 143-46.

¹⁹ Laurance Rockefeller was a strong supporter of the Lindisfarne Institute.

“Conservation and the Environment: RBF at 75 – Essays,”

<https://www.rbf.org/75/essay-environmental-grantmaking>, accessed June 17, 2020.

Michaela Walsh, interview by Emma Schroeder, March 2, 2020.

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- ²⁰ In fact, RBF gave \$50,000, of which, \$30,000 for 1974 and \$20,000 for 1975. Executive Committee minutes, RBF, November 22, 1974, RBF, Projects, RG 3, Box 706, Folder 4223, RAC; Walsh, interview.
- ²¹ Walsh, interview.
- ²² Walsh, interview.
- ²³ Michaela Walsh, Memorandum to RBF files, November 22, 1974, RBF, Projects, RG 3, Box 706, Folder 4223, RAC.
- ²⁴ Michaela Walsh, Memorandum to RBF files, November 22, 1974, RBF, Projects, RG 3, Box 706, Folder 4223, RAC.
- ²⁵ Executive Committee minutes, RBF, November 22, 1974, RBF, Projects, RG 3, Box 706, Folder 4223, RAC.
- ²⁶ For instance, RBF scientist Gerald Barney introduced Todd to the Donella and Denis Meadows, authors of *The Limits to Growth* (1972), and Walsh sent letters of introduction to acquaintances at the Ford Foundation, the Mellon Foundation, and Volunteers in Technical Assistance (VITA), among others. See correspondence in RBF, Projects, RG 3, Box 706, Folders 4223 and 4225, RAC.
- ²⁷ Gerald O. Barney to RBF Files via Michaela Walsh, November 11, 1975, RBF, Projects, RG 3, Box 706, Folder 4225, RAC.
- ²⁸ Gerald O. Barney to RBF Files via Michaela Walsh, November 11, 1975, RBF, Projects, RG 3, Box 706, Folder 4225, RAC.
- ²⁹ Michaela Walsh to RBF Files, July 24, 1975, RBF, Projects, RG 3, Box 706, Folder 4225, RAC.
- ³⁰ Walsh, interview. See <https://www.womensworldbanking.org/>, accessed June 22, 2020.
- ³¹ For an overview of Habitat, see Felicity D. Scott, *Outlaw Territories: Environments of Insecurity/Architectures of Counterinsurgency* (New York: Zone Books, 2016). For a history of NAI's Canadian work, see Steven Mannell, *"Living Lightly on the Earth": Building an Ark for Prince Edward Island, 1974-1976* (Halifax, NS: Dalhousie Architectural Press, 2018).
- ³² "The Ark," 1976, p. 3. NAI vertical file, University of Prince Edward Island.
- ³³ Mannell, *Living Lightly on the Earth*.
- ³⁴ "The Ark," 1976, p. 3. NAI vertical file, University of Prince Edward Island.
- ³⁵ "The Ark," 1976, p. 7. NAI vertical file, University of Prince Edward Island.
- ³⁶ The CUDP funding was canceled as of July 1975, and funding for the Ark moved to Environment Canada. Mannell, *Living Lightly on the Earth*, 63.
- ³⁷ William M. Dietel to Rockefeller Brothers Fund Trustees, February 27, 1975, RBF, Projects, RG 3, Box 706, Folder 4224, RAC.
- ³⁸ For instance, see David Lees, "Aboard the Good Ship Ark: Sailing the Rough Seas of Politics, Weather and an Expectant Society," *Harrowsmith*, September/October 1977.
- ³⁹ Todd, *A Safe and Sustainable World*, 109.
- ⁴⁰ Walsh to RBF Files, December 5, 1977, RBF, Projects, RG 3, Box 707, Folder 4228, RAC.
- ⁴¹ Walsh to RBF Files, December 5, 1977, RBF, Projects, RG 3, Box 707, Folder 4228, RAC.
- ⁴² Walsh to RBF Files, December 5, 1977, RBF, Projects, RG 3, Box 707, Folder 4228, RAC.
- ⁴³ Mannell, *Living Lightly on the Earth*, 81; Alan MacEachern, *The Institute of Man and Resources: An Environmental Fable* (Charlottetown, P.E.I: Island Studies Press, 2003), 57.
- ⁴⁴ Walsh to RBF files via William M. Dietel, June 28, 1977, RBF, Projects, RG 3, Box 707, Folder 4228, RAC.

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- ⁴⁵ Walsh to Todd, February 16, 1977, RBF, Projects, RG 3, Box 707, Folder 4227, RAC.
- ⁴⁶ *Rockefeller Brothers Fund Annual Report, 1979*, p. 3.
- ⁴⁷ Barney and Walsh to Yorke Allen, November 1, 1976, RBF, Projects, RG 3, Box 707, Folder 4231, RAC.
- ⁴⁸ Barbara and David Hertz, "Evaluating the New Alchemy Institute: Holistic Research and Development Approaches to Alternative Technologies: A Report to the Rockefeller Brothers Fund," March 31, 1978, p. 13, RBF, Projects, RG 3, Box 707, Folder 4231, RAC.
- ⁴⁹ Hertz, "Evaluating the New Alchemy Institute," p. 13.
- ⁵⁰ Hertz, "Evaluating the New Alchemy Institute," p. 29.
- ⁵¹ Hertz, "Evaluating the New Alchemy Institute," p. 22.
- ⁵² RBF explicitly referenced economic viability in the late 1970s. Their earlier grants to NAI were for innovation -- "developing new technologies for utilizing solar energy in the production of high-nutrition yield food on a minimum amount of space (*Rockefeller Brothers Fund Annual Report, 1974*, p.52)" their later grants went to "support of a study of the economic viability of the institute's agricultural bioshelters (*Rockefeller Brothers Fund Annual Report, 1979*, p. 21)."
- ⁵³ Kate Eldred, interview by Emma Schroeder, May 31, 2017.
- ⁵⁴ *New Alchemy Institute (Member Survey)*, Winter 1983, RBF, Projects, RG 3, Box 709, Folder 4238, RAC.
- ⁵⁵ *Rockefeller Brothers Fund Annual Report, 1983*, p. 9.
- ⁵⁶ RBF Board of Trustees Agenda, December 2, 1981, RBF, Projects, RG 3, Box 709, Folder 4236, RAC.
- ⁵⁷ Thomas Wahman to John Quinney, September 6, 1983, RBF, Projects, RG 3, Box 709, Folder 4239, RAC.
- ⁵⁸ Gary Hirschberg, a director from the late 70s to early 80s, founded Stonyfield Organics. John Quinney works at Seventh Generation.
- ⁵⁹ Macekura, *Of Limits and Growth*, Chapter 4. For instance, Earle Barnhart of NAI worked for the Caribbean Development Bank; Ron Zweig and Christina Rawley worked in China for the United Nations.