

2001 ANNUAL REPORT

**Development Center for Appropriate Technology
Spring 2002**



“In my 33 years of involvement with building codes, I have never seen anyone come from outside the code community and provide more effective leadership or have a more positive influence...”

-the late Bob Fowler, FAIA, P.E., C.B.O., and founding Chairman of the International Code Council

Message from the Director:

DCAT is ten years old! As we enter our second decade we've been reflecting on what we've learned and some patterns that have emerged in our work. So along with the usual list of activities, accomplishments and goals for the year ahead, this report offers some information and insight into DCAT's history and how it has informed who we are and what we do today.



Our primary focus during 2001 was on our building codes work: removing barriers to sustainable building and development by bringing our expertise and leadership to the building regulatory and green building communities. We have taken on the enormous task of shifting building regulation toward sustainability, and you can see from our 2001 List of Highlights that we continue to make significant progress along that path.

Because of DCAT's continuing efforts the impact of building construction on the environment is now seen as intimately connected to the regulations that mandate unsustainable practices or inhibit more sustainable ones. And U.S. building codes are much less likely to be exported to other countries without considering the impact on local skills, resources, economies, cultures or the environment.

The codes work exemplifies DCAT's commitment to nurturing constructive, collaborative relationships, finding common ground with those we seek to influence, and generating solutions that serve everyone. This approach bridges many separate efforts and inspires the kind of working trust and partnership necessary to create more sustainable systems while compensating for the effects of systems already in place.

We are heartened by our progress during 2001 and grateful for the opportunity to carry out such exciting, life-affirming work. Our progress has been made possible by the generous support of DCAT's supporters. Thank you for your commitment to a sustainable future.

Sincerely,

A handwritten signature in black ink, appearing to read "D. L. G.", written in a cursive style.

Straw Bale Construction Roots

Not long after DCAT was founded we became involved in the fledgling straw bale construction revival. What started as a small activity became DCAT's central focus for several years. An early alliance with Matts Myhrman and Judy Knox of Out On Bale, Unlimited joined DCAT's experience with mainstream and alternative construction and building codes with Matts and Judy's knowledge of straw bale construction and grassroots and community education. When Matts & Judy launched The Last Straw journal to gather and share what was being learned, David Eisenberg began writing articles. One, on straw bale construction and building codes, evolved into a working paper and DCAT became known as "straw bale codes central."

The DCAT staff wrote many more articles, consulted on projects, created publications, led workshops, seminars, and presentations all over the U.S. and abroad. We worked with many others to share the knowledge and expertise as broadly as possible. We sought out potential leaders and champions for this revival and collaborated with them. Many were professionals – architects, engineers, contractors, and even a few building officials. We also helped lead some of the early research and testing efforts, and developed improved techniques and designs. Eventually Matts Myhrman and David Eisenberg spearheaded a multi-year effort to write the first building code for load-bearing straw bale construction, adopted in Tucson and Pima County, Arizona in January 1996, and the basis for most of the other straw bale codes to date.

Broader Focus on Building Regulations

DCAT's focus eventually shifted to the larger set of barriers to straw bale and other alternative building techniques. We produced two reports, published by Public Technology Incorporated, on the institutional barriers to straw bale construction, documenting the challenges and successes experienced in two straw bale affordable housing projects in Tucson and Guadalupe, Arizona. We realized that building codes represented a critical leverage point that no one was addressing. We began to focus our energies there, initially for straw bale and other alternatives, and then expanding quickly to address the concept of environmental sustainability in the whole building regulatory arena. In January of 1998 we convened a landmark conference in Hesperia, California, introducing the idea of developing a sustainable context for building codes. This highly successful gathering of about 70 people from around the country – code officials, engineers, architects, researchers, builders, and proponents of alternative building systems – was a significant milestone in the history of this work.

At that point we recognized that the straw bale community had matured to the point that we could move from leadership to a supporting role, freeing us up to devote our time and resources to address the emerging set of larger issues. We celebrate our contribution to establishing straw bale as a technology with a strong future, based on competent practice, informed leadership, and of course, an abiding focus on safety. This transition led DCAT to an important set of lessons, which have since served our expanded building codes program.

DCAT's Three-Phase Approach

The lessons learned through our work with straw bale were many, and valuable. One key lesson was to view our work with organizations and the professional community as a three-phase process. We refer to our current program, now in its fifth year, as “Building Sustainability into the Codes.” The three-phases are defined as follows:

- **Awareness Building** activities create an understanding of how the building community is intricately involved in the health and stability of our natural life support systems (either in supporting or undermining sustainability). Part of the awareness building is recognizing and trying to understand the unintended consequences of current practice and exploring how those consequences can be avoided or remedied. Essentially, this is a process of introducing a much larger context for the definition of building safety—one which includes the full range of impacts of construction and development, not just onsite building safety, or short-term economic impacts. We believe people will more readily rise to the challenge of taking responsibility for their actions when they can see them clearly.
- **Capacity Building** offers assistance and support for the naturally occurring shift toward responsibility that comes with awareness of the need for change. We help develop and create better access to research and testing information, provide resource materials, design and implement trainings, and share success stories of projects that have used alternative approaches and received code approval. With the green building community, another set of challenges exist. Historically there has been almost no involvement by green builders and designers in the code change process with the exception of those focused on energy efficiency. We have been working to create ways for those most experienced with alternative materials and systems to engage directly in changing the codes so alternatives can be easily accepted and building safety preserved.
- **Transferring Leadership** involves DCAT's shifting role, from leadership and support, to guidance and consultation. The transition happens naturally, as the first two phases create deep awareness and commitment, and provide the tools to removing barriers to sustainability. As the organizations we work with emerge as leaders for change in their own right and embrace a movement towards sustainability, we are able to shift our focus and resources to catalyze other areas of need.

Here is why this approach works. There is enormous power in identifying the values and goals we share with those we are seeking to influence and then developing our program based on that alignment. This common ground becomes the basis for trust in the relationship, and the starting point and source of motivation for the work. For example, code officials are committed to creating safe buildings and protecting the public safety, health and general welfare, clearly shared values with those committed to more sustainable construction. By revealing the unintended consequences of mainstream building and development practices, we reveal the risks inherent in the status quo. We show the code officials that protecting the earth's natural systems is as important and consistent a part of their responsibility as protecting people in individual buildings. Most importantly, when this work is done well, the process empowers those with the capacity to create needed change to internalize the responsibility for the ongoing process.

We're very excited about this approach. We know significant, positive change is possible because we are watching it unfold in places and ways no one believed it could, or would. We hold high expectations for the future, even in the face of daunting challenges. By this very purposeful process of cultivating deep connections through shared vision and goals, this is heart work as much as it is technical work. We are proud to be a part of a growing movement of practical visionaries – people with the competence and passion to do their work in harmony with the earth's intricate life support systems, recognizing our collective need to maintain and regenerate them. In the largest sense, our work is inspiring a growing network of these practical visionaries, working in related fields, and connected through common values to the shared goal of a sustainable future. The continued emergence of partners in this work gives us great hope for the future.

2001 HIGHLIGHTS

DCAT leads the movement to incorporate sustainability into all levels of building regulation locally, nationally, and globally. 2001 marked substantial progress toward many of our goals, indicated by the deepening and expanding networks and relationships necessary to facilitate systemic change. DCAT has achieved unprecedented success in creating awareness about the need for environmental and social accountability in building regulation through our leadership, facilitation, and educational roles with key organizations and individuals, nurturing a healthy ecological, social, and economic future.

DCAT Director David Eisenberg Chairs Earthen Materials Standards Task Force

DCAT leads an effort within the American Society for Testing and Materials (ASTM) E06.71 Subcommittee to develop standards for low-impact building systems. David Eisenberg initiated and chairs a task group developing a set of standards for earthen materials, including rammed earth, adobe, and compressed earth block. These standards will assist people in getting code approval for building projects using these materials.

DCAT Leads “Greening of the Codes” Committee for U.S. Green Building Council

The U.S. Green Building Council (USGBC) represents over 1000 organizations and companies from across the building and development sector working to promote buildings that are energy-efficient, more environmentally responsible, and economical to build, operate, and maintain. David Eisenberg serves on the Board of Directors of the Council and spearheaded the creation of the Greening the Codes Committee, providing a vehicle to educate Council members about building regulatory issues and creating a strong voice representing the green building and development community in working with the building regulatory arena.

DCAT’s “Identifying Barriers to Green Building Survey” Completed

DCAT conducted a web-based survey to assess issues related to green building and building regulations. Over 250 respondents, including both code officials and those whose work must comply with codes, provided information on their experiences. The survey provided quantitative information validating and elucidating many of the problems DCAT has been working to address over the past few years—the existence and nature of the regulatory barriers to green building—as well as successful strategies to overcome those barriers.

DCAT Partners with State of Pennsylvania to Create Pilot Training Program for Codes Officials

DCAT is collaborating with the Governor’s Green Government Council of the State of Pennsylvania to develop and administer a pilot training program for code officials. This program will develop curriculum and a training workshop for code officials on green building, design, and alternative materials. This pilot is the first step in developing a model program for all of Pennsylvania, with eventual expansion into a national program.

Continuing Developments with Model Code Organizations

DCAT and the International Conference of Building Officials (ICBO) continue to deepen their relationship, working together to integrate sustainability issues into national building codes, partnering on writing our building codes survey, working together with USGBC, and focusing on the integration of these activities into the International Code Council (the organization into which all three national model code organizations will merge in 2002). We will initiate a regular column on green building in ICBO’s *Building Standards* magazine in January, 2002.

Nurturing Our Roots through Local Activities

DCAT has been involved in a number of local activities such as leading the Southern Arizona Green Building Alliance, helping plan and participate in the Hot Topics/Cool Solutions conference, and serving on the advisory committee of the *Building from the Best of Tucson* project, administered by the Sonoran Institute.

Significant Publications, Conferences & Keynote Speeches

David Eisenberg co-wrote the feature article on sustainability and building codes for the September issue of *Environmental Building News*, the leading newsletter on environmental design and construction. A shorter article on the same subject appeared in the May issue of *HopeDance Magazine*. David Eisenberg’s foreword was also published in the book, *Living Homes: Sustainable Architecture and Design*, by McGreggor and Trulsson. David’s presentations are in demand across the country, highlighted by keynote speeches at Hawaii’s first green building conference, and at the Maryland Chesapeake Bay Tributary Teams annual meeting in Baltimore.



2002 ACTIVITIES

In 2002 the majority of activities in this report will be ongoing. New activities will include:

Trainings for Building Officials

DCAT has been awarded a grant for code official training for the State of Pennsylvania through the Governor's Green Government Council. This pilot program will consist of a series of green design and technology code training modules as part of a more comprehensive code official training program planned to be developed over the next few years.

USGBC Arizona Chapter Development

DCAT is helping lead the establishment of the Arizona (possibly Southwest) Chapter of the U.S. Green Building Council, with David Eisenberg serving as the USGBC Board liaison. Among the strong supporters of this effort are several members of the Arizona chapter of ICBO, the code organization active in Arizona, creating an alliance that should help coordinate green building efforts with code-related refinements in the region.

Expanded Publication Exposure

DCAT has coordinated a third feature issue of ICBO's *Building Standards* magazine to be published this Spring on the topic of green building. DCAT is also proud of its new column, "Building Codes for a Small Planet," on green-related topics that will appear in every issue. This represents a tremendous opportunity to establish a consistent venue for alternatives within the codes community's own highest circulation publication. There are a number of other possible publication avenues in current development.

David Eisenberg Invited to Join *Natural Home* Magazine Advisory Board

David Eisenberg has been invited to serve on the Advisory Board of this widely respected and influential magazine. Included in his duties will be ongoing editorial input, the opportunity to submit articles, and answer reader questions in his area of expertise.

Funds Sought for Website Expansion

DCAT has submitted two proposals that include substantial increases in our web development budget. Our goal is to develop the codes and standards section on our website that will make it the definitive code-related resource for green builders and code officials alike. It will be designed to both gather and disseminate code-related information on code problems and solutions, code change proposals, case studies, technical data, materials and testing information, contact information for builders and code officials, and specific tools to assist the approval process for more sustainable projects.

A Growing Academic Alliance

DCAT and the Massachusetts Institute of Technology's Building Technology Program are developing a partnership to bring MIT's expertise and resources to bear on such projects as research and testing and development of alternative materials, with a goal of assisting in our efforts to gain code approval or develop appropriate standards for these materials. Initiated by a professor in the Building Technology group, the first project will be MIT's assistance in the development of a Standard Guide for Earthen Structures in the ASTM Earthen Materials Task Group. We have also been contacted by Colorado State University, and are now seeking to establish a far-reaching academic alliance.

FY 2001 STATEMENT OF FINANCIAL POSITION

December 31, 2001 (Unaudited)

Assets	
Cash	77,222
Receivables	43,000
Other Assets	34,117
Total	154,339

Liabilities	
Accounts Payable	8,733
Total Current Liabilities	8,733

Revenues	
Grants	162,800
Consulting Fees	13,412
Contributions	5,432
Honoraria	5,500
Interest Income	3,182
Other Income	2,043
Total Revenues	192,369

Expenses	
Project Expenses	190,018
Administrative Expenses	63,339
Total Expenses	253,357

DCAT's Fundraising Philosophy

Contributing to DCAT is an opportunity for individuals and organizations to join us in the crucial work of reducing the negative impacts of global construction and development practices. We see each and every donation as an expression of partnership and support for our pioneering and successful efforts that lead the movement towards sustainable building practices locally, nationally and globally.

DCAT's Fundraising Policy

- Funds contributed to DCAT are used for the announced purposes of the organization only.
- Publicity and promotional activities are truthful and non-deceptive.
- Personal information provided to DCAT is kept confidential and will not be sold, rented, or given to anyone without consent.

DCAT's Funding Sources

DCAT is funded both locally and nationally, drawing from a broad base of funding sources including foundation grants, individual and corporate donations, consulting fees, speaker's fees, honoraria, book royalties, workshop and training fees.

BOARD AND STAFF

DCAT BOARD

David Eisenberg, Co-Founder, President
Carlos Nagel, Vice-President
Bob Cook, Co-Founder, Treasurer
Ingrid Cardon-Downey, Secretary
Barbara Elfbrandt

DCAT STAFF

Mr. David Eisenberg, Executive Director

David Eisenberg co-founded the Development Center for Appropriate Technology in 1991. He has well over twenty years of construction experience including troubleshooting construction of the steel and glass cover of Biosphere 2 in Oracle, Arizona, building a \$2 million structural concrete house, a hypo-allergenic structural steel house, and building masonry, wood, adobe, rammed earth, and straw bale structures. He is co-author of the Straw Bale House book, and helped write the first loadbearing straw bale construction building code for the City of Tucson and Pima County, Arizona. Much of his time is devoted to developing relationships with members of the building, design, and building regulatory communities, promoting a sustainable context for building regulation, offering trainings on alternative building approaches, and guiding alliances with partners in specific activities, such as the ASTM Earthen Materials Task Group and the Greening the Codes Committee of the U.S. Green Building Council. David is Vice-Chair of the ASTM E06.71 Subcommittee, and serves on the Board of Directors of the U.S Green Building Council.

Anthony (Tony) Novelli, Assistant Director

Tony Novelli has been with DCAT since 1998, and has held the position of Assistant Director for over two years. His responsibilities have included the full range of DCAT activities, with a strong emphasis on operations and organizational support, and relationship building with partner organizations. He works very closely with David Eisenberg to guide all key strategy and policy matters. On a daily basis, Tony manages the organization, handling many of the official communications, guides fundraising, develops and maintains the computer systems and website, and performs most of the public outreach regarding alternative construction.

Loretta Ishida, Program Assistant

Loretta Ishida's professional experience includes community development work in the Ivory Coast (West Africa) and Mexico. Her responsibilities at DCAT during the past two years related to green building and building codes include technical research, technical and report writing, task group and committee coordination, and project development and management.

Holly Altman, Administrative Manager

Holly Altman is known for her ability to motivate and organize non-profits administratively in ways that support their mission and goals. Her responsibilities for DCAT include accounting, bookkeeping, creating financial reports, inter-office and board communications, general office organization, and writing and editing grant proposals, fundraising materials, and general correspondences.

2001 SUPPORTERS

It is with heartfelt appreciation that we acknowledge the individuals and organizations that supported the Development Center for Appropriate Technology during 2001.

Thank you for your willingness to put action behind your convictions.

FOUNDATION SUPPORT

Compton Foundation
Merck Family Fund
Bess Spiva Timmons Foundation
Turner Foundation
Wallace Global Fund

SUPPORTING ORGANIZATIONS

Building Environmental Science & Technology (Bion Howard)
Building for Health (Cedar Rose Guelberth)
CICADA Architecture/Planning Inc.
City of Tucson Energy Office
Data Methods Corp.
Energysmiths (Marc Rosenbaum)
Design Harmony, Inc. (Gail Lindsey)
Down to Earth (Sigi Koko)
Environmental Design Collaborative
Gifts in Kind International
Girvin, DeVries & Associates
TheGreenTeam, Inc. (Dru Meadows & Chuck Bell)
Lightfoot Cycles (Rod Miner)
Madera Realty & Mortgage (Bob Tracy)
O'Brien & Company
Oregon Building Officials Association
Rillito Consulting Group
Sonora Permaculture Teaching Guild
William McDonough & Partners
With Gaia Design (Susie Harrington)
Woodin Construction Co.

INDIVIDUAL SUPPORT

Cecil Barton
Jeff & Rhonda Blau
Doug & Jackie Crocket
Shelley Demeranth-Shanti
Ingrid Cardon-Downey
Barry Dunn
Tres English
Arthur & Anita Flagg
The Flamingo Kid
Anthony Floyd
William L. Ford
Holly Henning Foster
Gary Goodson

Harley Higbie
Loretta Ishida & James Harding
Scotty Johnson & Janelle Weakly
Hy Kaplan & Susan Vardon
Judith Knox & Matts Myhrman
John Laswick & Elizabeth Vierling
Richard Larry Medlin
Nancy Richardson &
Jeff Halverson
Derek Roff
Jonathan C. Ruez
J.P. Schaffer

Andrew & Carolyn Shapiro
Lynn Simon
Tim Spears
Robert Stang &
Merilee Cameron
Bill & Athena Steen
Lhasha Tizer &
Russell Lowes
Brian Williams &
JoAnne Tippett
Cynthia L. Williams
Caroline Wilson
Natasha Winnik

Development Center for Appropriate Technology (DCAT)

P.O. Box 27513 Tucson, AZ 85726-7513

ph (520) 624-6628 • fax (520) 798-3701

www.dcat.net • info@dcat.net