



A Report Card
Promoting Environmental Sustainability

Department of Architectural Studies, University of Missouri, Columbia, MO.



Left photo: Bear Creek: Site Visit and Charrette for Ecological Pedestrian Community in Columbia
Right photo: Earthday-- MU Extension Wind and Solar display at Columbia Earth Day Celebration 2006

MISSION

The MU Department of Architectural Studies' mission is to educate future design practitioners, advance research of the built environment, and disseminate knowledge of architectural studies to improve quality of life for people.

PHILOSOPHY

The philosophy of the MU Department of Architectural Studies embraces the synergy created between architecture and interior design. Having a symbiotic relationship, both fields explore the design process and its final products. Promoting the meaning and value of physical settings and responding to the human condition, the program investigates the interaction between people and their surroundings to create a more beautiful and sustainable world. The program encourages an interdisciplinary, scholarly climate celebrating aesthetic values that are complemented by the interrelations with the human environment.

The sustainability of both the built and natural environments is inherent in design education. Responsible environmental stewardship includes an awareness and sensitivity to the systemic nature of life on this planet and the consequences of intervening in this ecosystem. The Department of Architectural Studies embraces this principle in its undergraduate and graduate programs. Sustainability is embedded into design studio problems integrating specific sustainable theories and practices from supporting coursework. The department's graduate program research foci are driven by the inclusive nature of sustainability. The design with digital media and the environment and behavior options both share this common theoretical and applied theme. Meaningful environmental intervention that contributes to the enduring qualities of the designed and natural environments for all people is at the heart of the Department's work. Sustainable environments are part of a thriving design program and are at the core of the Department's philosophy.

SUSTAINABLE AGENDA, STRATEGIES, AND PROGRESS REPORT

Sustainable agenda:

The MU Department of Architectural Studies faculty assert that we are at a crossroads where meaningful culture change for sustainability can occur. Faculty and students have a strong grass roots dedication to a sustainable future in which we will spend the rest of their lives. An agenda in environmental sustainability needs leadership support, encouragement, and operating demonstrations of how sustainability can be achieved. We believe we have an ethical obligation to foster a culture of sustainability as part of our Land-Grant mission.

Strategies as planned actions and efforts for monitoring progress:

- Advance sustainability through teaching, research / scholarship, and service.
 - o Teaching: integrate sustainability in multiple courses. Coursework leading to undergraduate students passing LEED exam. Provide hands-on-learning experiences.
 - o Research / scholarship: encourage seeking of funding, peer review of work, and dissemination of knowledge
 - o Service: provide leadership in Extension programming and activities.
- Become leaders as an academic program promoting sustainability.
- Communicate sustainable efforts. Post and maintain on department web site an ongoing accounting of sustainable activities completed and in process to promote better connections and visibility.
- Provide faculty leadership for student organization of Emerging Green Builders (student chapter—US Green Building Council).
- Demonstrate department practices that promote sustainability as a model program.
 - o Increase efficiency and use of renewable resources and decrease waste.
 - o Practice sustainable decision making in renovation of facilities, routine department operations, and instruction.
 - o Encourage LEED accredited professional certification among faculty.
- Participate in department, campus, community, state, and national groups promoting this agenda. These include involvement with Architectural Studies Advisory Board, Campus Planning Committee, and U.S. Green Building Council and its Heartland Chapter.
- Utilize endowed lectureships and development funds to promote sustainable education.

Progress Report

Current memberships in sustainable organizations

- USGBC. The University of Missouri is a member of the US Green Building Council (USGBC)
- USGBC Missouri Heartland Chapter. Faculty members in the Department of Architectural Studies and members of the Department's Advisory Board were founding members of the local chapter.
- LEED Accredited Professionals: Department Chair Ruth Tofle, Ph.D.; Resident Assistant Professor/ Extension Specialist Michael Goldschmidt, M. Arch.; and MU Extension Associate/Resident Instructor Barbara Buffaloe, M.S. are LEED (Leadership in Energy and Environmental Design) Accredited Members of USGBC.
- Emerging Green Builders (EGB): Spearheaded within the Department of Architectural Studies, MU has started a local chapter of Emerging Green Builders—a student chapter of USBC. The Department's MU Extension Associate/Resident Instructor Barbara Buffaloe and graduate student Anne Felts are the faculty coordinators for the newly formed group which has approximately 40 members.
- AIA COTE: Assistant Professor Michael Goldschmidt is a member of the American Institute of Architects Committee on the Environment (AIA COTE) and a member of the American Solar Energy Society (ASES).
- NAHB - NCHE: Michael Goldschmidt is a University Consortium member of the National Council of Housing and Environment, whose mission is to balance environmental concerns with the need for affordable housing. It is part of the National Association of Home Builders.

Department's current activities in sustainable design

- Students will partner with Missouri University of Science and Technology (formerly University of Missouri-Rolla) engineering students to compete in the 2009 Solar Decathlon. They will be one of 20 international teams of college and university students compete to design, build, and operate the most attractive, effective, and energy-efficient solar-powered house. UMC faculty members, Barbara Buffaloe and Michael Goldschmidt, are leading the effort along with MU graduate student, Anne Felts.
- Professor Ruth Tofle's ongoing line of inquiry is concerned with the environment and behavior paradigm seeking to improve the built environment by understanding people and how they interact with their environment to advocate aging in place and fall prevention. She is interested in place attachment and the role of color in health care for sustainable living environments. Recent funding sources for team research include: Alzheimer's Association, RAND / John A. Hartford Foundation, and Coalition for Health Environments Research. Her teaching of design business practices and compliance and specifications integrates sustainable design decision making.
- Professor Ben Schwarz is Editor of the *Journal of Housing for the Elderly*, Haworth Press and has Edited ten books utilizing the environment and behavior research area promoting aging in place and improvements in long term care. His work includes dementia special care units, nursing homes, assisted-living, design process and design theory, and international residential environments. Recent funding sources for team research include: RAND / John A. Hartford Foundation and Coalition for Health Environments Research. His teaching of Fundamentals of Environmental Design, programming, and studio courses integrate sustainable design solutions.
- Associate Professor Ronald Phillips' scholarship is in environmental gerontology, research methods, organizational systems, design programming and evaluation, and behaviorally-based design. He teaches courses in building systems, environment and behavior, and design studio utilizing sustainable solutions.
- Assistant Professor So-Yeon Yoon utilizes digital technologies in her teaching and research for effective communication. Her current research involves understanding the meanings of environmental factors among different user groups using high fidelity computer simulations. Digital technologies provide a sustainable solution in reducing papers and speeding up delivery in addition to more reliable references for designers and design decision maker.
- Assistant Professor Newton D' Souza's current research involves creating better learning environments both as a product and process. Bringing cognitive and behavioral aspects to bear on design solutions, his teaching philosophy in programming and studio courses centers around context-based designing and sustainable thinking processes.
- Resident Assistant Professor /Extension Specialist Mike Goldschmidt's scholarship is in ecological interior design, specification writing, energy efficiency, and alternative energy systems. He teaches technical courses in materials and methods, sustainable technologies and systems, and compliance and specifications.
- Extension Associate/Resident Instructor Barbara Buffaloe is providing statewide workshops on energy efficient homes for Missouri homeowners and renters. Ms. Buffaloe recently completed her M.S. degree in the department with a research project focused on Missouri consumer behaviors concerning energy-efficiency in homes.
- Associate Professor Dr. Ronn Phillips and Assistant Professor Michael Goldschmidt are working with Cooper County residents to envision an MU Extension, sustainable-technology demonstration facility and community center on Interstate 70. The two faculty members are coordinating a design charrette that will bring together a regional coalition of citizens to create the green building design.
- Mr. Goldschmidt is working with the Holt County Extension Office on a vision for their proposed green-building design for an Extension Office and Health Center.
- Extension Associate/Resident Instructor Barbara Buffaloe serves on the City of Columbia Environment and Energy Commission which advises the city council on how to develop a plan for energy conservation and in all matters pertaining to environmental protection.

- MU Architectural Studies Students, Assistant Professor Michael Goldschmidt, and Graduate Student Lisa Hamilton-Hill are working with the Central Missouri Community Action agency and Rainbow House to create a sustainable building design for a transitional shelter for homeless teens in Columbia, Missouri.
- Associate Professor Ronn Phillips, Arch. D., Assistant Professor Michael Goldschmidt, MU Extension Associate/Resident Instructor Barbara Buffaloe, and graduate students Lisa Hamilton-Hill and Anne Felts are presenting papers on Sustainable Design at the 2007 Housing Education and Research Association conference in Charlotte, North Carolina in October.
- Associate Professor Ronn Phillips, Arch. D. and Professor Michael Goldschmidt, in collaboration with six regional Housing and Environmental Design Specialists and graduate student Anne Felts, are developing a Master Builder program to teach Missouri citizens how to make simple, do-it-yourself energy- efficient and environmentally sensitive home repairs.
- The curriculum in the Department includes interdisciplinary undergraduate and graduate classes focused on Sustainable Design. These classes include Sustainable Environments for graduate students and Sustainable Technologies for upper-level undergraduates and graduate students.
- In the Sustainable Technologies class, students utilized the waste materials generated in classes and recent accreditation site visit displays to create and build furniture pieces. These projects are presented at Sustainable Living Fairs and Earth Day celebrations.
- The Compliance and Specifications class routinely requires a project with sustainable solutions in specifications of lighting, floor covering, plumbing, etc.
- UM Extension Housing and Environmental State and Regional Specialists are part of two multi-year, national programs: Healthy Homes and Healthy Indoor Air for America's Homes. Funding for these programs is provided through grant money from the Department of Housing and Urban Development (HUD) and the Environmental Protection Agency (EPA).
- Department renovations in Stanley Hall included changing incandescent to fluorescent lighting; selection of bamboo flooring and recycled fabric in Gallery. Every attempt is made to have renovations be sustainable solutions.
- Students and faculty are provided with recycling bins for paper, aluminum cans, and other recyclables. We are working with Steve Burdic, the campus Coordinator in Solid Waste & Recycling to continuously improve recycling efforts.
- Professor Ruth Tofle serves on the City of Columbia Building Committee charged with advising on the new City government building for a USGBC certified structure.
- Professor Ruth Tofle serves on the MU Capitol Review Committee, Chairs the MU Campus Planning Committee for Facilities and Grounds, and is an advocate for sustainable design solutions.
- Gray Design Group, Inc., owned by alumna Wendy Gray, donated returned office furniture pieces from their warehouse to be recycled by the Department of Architectural Studies, Textile and Apparel Management Department, Dean's Office, and MU Extension.
- The Building Technology Lab uses donated scrap hardwoods for most of its student-centered learning exercises. The scraps have come from local woodworkers and local residents who have heard we are looking for wood to use for projects. We have also gone to Capen Park -- the City's yard waste area, and collected logs and stumps for turning on the lathe. The wood is green (not kiln dried) and therefore very easy to carve and to turn.
- A nomination was submitted for Bob Berkebile to be considered for an Honorary Degree from the University of Missouri.
- Sustainable design is integrated in the curriculum and efforts are made with each student to become advocates in their future personal and professional life.

Department's past activities in sustainable design

- Architectural Studies faculty led efforts for the College of Human Environmental Sciences to vote for unanimous approval (January, 2008) to actively recycle and endorse MU campus recycling initiatives. Steve Burdic, Campus Facilities, will work with the College in allocating recycling bins and pick up. Recycling efforts will involve faculty, students, and staff in meeting requirements of aesthetics, life safety codes, and affordability.
- Thirty students and faculty attended the USGBC Green Build Conference in Chicago, November, 2007.
- Green Homes for Greensburg - Emerging Green Builders students participated in a competition to design sustainable homes for residents of Greensburg, Kansas in 2007. This was covered in the in the 5:00 and 10:00 evening television news September 6, 2007 on KOMU.
- The Department of Architectural Studies sponsored its second lecture by Bob Berkebile of BNIM Architects in Kansas City, Missouri on September 25, 2007. Mr. Berkebile gave the 2nd annual Carol Anne Williams Lecture titled "*Can a Design Revolution Meet Humanity's Greatest Challenge?*" to faculty, students, practicing professionals and guests. Invitations included: Faculty and students at MU Colleges of Human Environmental Sciences, Engineering, Business, Agriculture, Foods and Natural Resources, and Journalism; Johnson Community College and Stephens College; AIA members; University administrations; and MU Campus Facilities.
- Assistant Professor Michael Goldschmidt presented the plenary lecture "Intuitive Sustainable Buildings and Homes in Missouri" at the 2nd annual Symposium on Democracy at Westminster College in Fulton Missouri in September 2007.
- Extension Associate/Resident Instructor Barbara Buffaloe and Assistant Professor Michael Goldschmidt presented "Passive Solar Design for Missouri Homes" and "Photovoltaic and Wind Energy for Missouri Homes" at the 2007 Columbia Sustainable Living Fair and the 2007 Ozark Renewable Energy Conference in September.
- A poster presentation by Graduate Students Lisa Hill, Barb Buffaloe, and Anne Felts from their Graduate Studio work in home wind and solar energy was part of the 2007 "Advancing Renewable Energy in the Midwest" Conference in March in Columbia, Missouri.
- Faculty, staff, and students have several booths at annual Earth Day events held in the community.
- The department has been actively involved in the Bear Creek Prairie project in Columbia. The department coordinated a design charrette for the developers Andy Gutti and Sherri DeRousse to create environmentally sensitive site planning for this ground-breaking, pedestrian green community. Professor Benjamin Schwarz, Ph.D. has also used the project for his Summer Design Studio.
- After working with our students, a substantial pledge was made to initiate the Andy Gutti and Sherri DeRousse Gutti Sustainable Design Fund to be used for unrestricted support that will address the focus on sustainable design instruction and/or research in the Department of Architectural Studies. Approved expenses may include, but not limited to, support of outstanding instruction, student field trip opportunities, scholarships, gallery exhibitions, instructional books and visuals, demonstrations and displays, software, etc., as they relate to instruction and/or research in sustainable design.
- A 2007 proposal was submitted by the department with Andy Gutti and Sherri DeRousse for the National Award for Smart Growth Achievement. The winner has not yet been announced.
- Associate Professor Ronn Phillips, Arch. D., and Assistant Professor Michael Goldschmidt presented a keynote address titled "Sustainability: Using Green Building for a Better Tomorrow " at the Environmental Studies Conference in Kirksville, Missouri on April 17, 2007.
- Graduate student Cheryl Robinson defended her MA project titled "Instructor's Guide to Jason McClennan's The Philosophy of Sustainable Design" in December 2005. Her work is currently being developed for commercial publishing with the next edition of the book, which is used in many university design programs.
- Assistant Professor Michael Goldschmidt was a co-moderator for the Healthy Homes track at the 2007 Priester Health Conference in Kansas City, Missouri.
- Faculty and students participated in the Greening the Heartland Conference when held in Columbia, 2004.

- Assistant Professor Michael Goldschmidt, MU Extension Associate/Resident Instructor Barbara Buffaloe, and graduate students Anne Felts and Lisa Hamilton-Hill worked with Brett Dufur, mayor of Rocheport, Missouri on a project called "Greening Rocheport". The report listed sustainable strategy possibilities on multiple existing homes and commercial buildings in the city.
- Assistant Professor Newton D' Souza has authored two white paper proposals for *Mayor's green building team Milwaukee* on Kyoto protocol and sustainable initiatives in local/state bodies. He has also provided research assistance for Non-profit organizations such as Milwaukee Rescue Mission and Milwaukee Idea Homes that focus on sustainable design solutions.
- Neighborhood Association. Michael Goldschmidt received the Good Neighbor Award for his work in Greening the North Central Neighborhood Association in Columbia based on sustainable solutions for the neighborhood.
- Professor Ruth Tofle, Chair of MU Campus Planning Committee for Facilities and Grounds and Peter Ashbrook, Chair of the Environmental Affairs Committee worked with their committees to draft revisions for the MU Planning Principles to include sustainable principles mirroring USGBC goals. Principles were adopted and now are being implemented.
- On April 8, 2005, Mr. Berkebile gave a lecture at MU titled "Designing a Future our Children Will Celebrate". The Department coordinated a design charrette with his firm BNIM for the design of the Rock Bridge Memorial State Park Discovery Center. The building, when completed, will use state of the art design strategies for ecological design.

Department's local Advisory Board members leading sustainable efforts

- Advisory Board member Robert Unrath served on the committee to develop the University's current Sustainable Design Policy <http://www.cf.missouri.edu/pdc/sustainabledesignpolicy.html>
- Department's Advisory Board members Robert Unrath and Tina Mann are active in the implementation of campus wide sustainable policies. Both have served or are currently serving on the campus' Environmental Affairs Committee.
- Advisory Board member Nick Peckham, has been the most visible local pioneer and advocate for sustainability. For nearly 30 years, PWA's work has been designed to meet what since 1998 has been identified as LEED standards. His work also includes:
 - o Co-Founder of the Missouri Heartland Chapter of the USGBC, and currently President.
 - o Member of the Board of Directors of the USGBC Heartland Regional Council and currently the LEED for Homes Advocate for the Missouri Heartland Chapter. Nick is also a frequent speaker on Sustainability and Green Building.
 - o Co-Founder of the Emerald Triangle Sustainable Region organization - now including 390 corresponding members.
 - o Founder of the Greening the Heartland Conference - an annual conference addressing the green building challenges of the central part of the United States. Columbia 2004, Chicago 2005, Kansas City 2006, Madison 2007, St. Louis 2008, Detroit 2009.
 - o Co-founder of the "Green Homes for Greensburg" Emerging Green Builders Competition 2007.
 - o PWA has designed five LEED registered projects: Kirksville Regional Center (2006), Missouri Department of Conservation; Cape Girardeau Nature Center, Missouri Department of Conservation(2005) ; Columbia Fire Station # 7 (2007); Columbia Fire Station # 9 (2007); Boonville Library (2007).
- Advisory Board member Shelley Simon, Principal of Simon Oswald Associates, spearheaded their 20th anniversary of their firm to highlight extensive efforts in sustainable design with their Thursday night "green ideas" for the Columbia Twilight Festivals.
 - o Their Missouri Hall Remodeling project at Columbia College is LEED registered and was designed to meet a "Gold" certification level. Final compliance will be determined later this year.
 - o In association with DLR Group, they are working on the design of two new elementary schools and a new high school. While these projects are not going to be submitted for LEED certification, they will be strictly designed to LEED standards.
- Advisory Board member Barley Phillips with Bass Pro gave the 2005 Executive in Residence presentation describing his portfolio of work that included sustainable design.

- Advisory Board member Dave Griggs, owner of Dave Griggs Flooring America offers sustainable products and has donated a recycled floor covering (and installation) for student and faculty to see product in use.
- Advisory Board member Frank Sovich is Co-Owner of Marathon Office Interiors which carries Steelcase and Global products. Steelcase pursues extensive Cradle to Cradle initiative; Global has Greenguard certification. Marathon has donated recycled floor covering (and installation) to the Mid-Missouri Food Bank
- All Advisory Board members are good about recycling catalogues and samples in donating them to our Resource Room. After the department is done with them, they are again recycled by children in the MU Human Development and Family Studies Child Care Center and other local elementary schools.



Photos: Amy Wiggins and Willie Mak presenting Bear Creek project to jury panel that included clients, representatives of State agencies, invited design professionals, faculty, and students