8/23/05

University of Hawaii
Center for Smart Building and Community Design

PROSPECTUS

Background:

Hawai'i's coastal communities are vital economic, social, and cultural centers that provide homes, jobs, recreation, and an elevated quality of life for our citizens in a near perfect climate and natural environment that is among the most unique and delicate in the world. Yet, the paradise that we enjoy each day is under increasing pressure from population growth, short-sighted economic development, over-exploitation of our natural resources, habitat degradation, and an insensitive consideration of the native host culture's values.

Our use of energy and water, our handling of waste, and the continually expanding urban sprawl threatens our quality of life and that of generations to follow. Hawaii, as an island state, with limited land and resources, can represent communities on continents and even the global community as this fragile planet floats through the vast ocean of space. A central premise of the Center for Smart Building and Community Design is that *we can* and *we must* do better.

This Center will bring to bear the expertise from its college and universities network and the resources and support from its public and private partners to apply long-term solutions to real projects within the university and outward to the larger community. Solution-based information on policy and regional planning, urban design, sustainable tourism, coastal ecosystems health and watershed restoration, high-performance building design and energy efficient campus retrofits will be developed, disseminated and demonstrated through the Center's activities.

Through research, education, and the facilitation of viable solutions to campus and community needs, the center will assist in elevating the quality of life through an improved interaction among the built, natural and human environments in Hawaii, the Region and to coastal communities beyond.

The goal of the University of Hawaii Center for Smart Building and Community Design is to encourage the creation of vibrant, sustainable coastal communities which have the smallest environmental footprint. The center will emphasize the demonstration of solutions in Hawaii and work effectively with its partners to expand the solution-based opportunities to national and international settings. The Center will consolidate university, state, federal and private resources and expertise that can support and expand the

center's goal of creating economically viable, environmentally and culturally supportive and aesthetically attractive communities. Through a variety of partnerships and support mechanisms the Center will become a locus of research, resource and educational outreach. The Center will be available to policy makers and the professional and general communities.

This initiative will be administered by the University of Hawai'i Sea Grant College Program and have as its principal partner the UH School of Architecture. The Center will be holistic and multidisciplinary. Working closely with the U.S. Environmental Protection Agency (EPA), U.S. Department of Energy (DOE), U.S. Department of Commerce, and the Hawai'i State Department of Business, Economic Development and Tourism (DBEDT), the new Center will bring to bear the full resources of the University of Hawai'i to help address and help solve the myriad of growth and development problems that are facing coastal communities.

The Center will focus on two mutually supportive areas that are critical to addressing future growth issues: (1) building design, and (2) community design. Buildings consume resources, both in their construction and in their operation. They account for almost 40 % of all of the energy consumption in the State of Hawai'i. There are, however, solutions; effective tools that can be employed to reduce these costs and more importantly, save valuable resources for the future. New, proven materials and design techniques can significantly reduce energy, water, and waste in new buildings and in older buildings through retro-fits. Buildings are part of the infrastructure that creates physical communities.

Designing communities that incorporate responsible building principles and balanced community design concepts can have a monumental impact in supporting economic growth and in reducing future environmental impacts while creating livable communities that both honor our past and provide for the future. The Center will use a multidisciplinary approaches to assist communities in the design of cost-efficient transportation systems; in the efficient and sustainable use of land, natural resources and energy; in building walkable and bikable neighborhoods; in restoring existing neighborhoods and urban centers; in preserving our built heritage for future generations; and in building broad-based citizen participation in the process of community design.

The work of the **Center for Smart Building and Community Design** will encompass:

- **Demonstration Projects** -- working closely with university and community leaders to provide them with the scientific and engineering knowledge and information they need for achieving 'smart growth' in campus and community planning and development.

- **Research** – conducting research on materials, systems, and design techniques aimed at introducing new technologies and approaches for reducing the costs of constructing and maintaining buildings, and incorporating 'smart growth' design approaches in campus and community development projects.

- **Education** -- providing educational materials and services to the University of Hawai'i, local government and community organizations, architectural and engineering design firms, developers and builders, and other relevant organizations to promote smart building and community design principles and approaches.

Projects:

The new **Center for Smart Building and Community Design** will incorporate and support a number of specific project activities that include:

- Coconut Island Development -- working closely with the University administration and the Hawaii Institute of Marine Biology (HIMB) to support the design and construction of new facilities such as; a world class marine laboratory that exemplifies sustainable design and operations, a boat house/education center and a visitor center that demonstrate smart building principles.

- U.H. Manoa -- working closely with the University administration to promote long-term balanced, campus planning options, energy and water conservation on the U.H. campus, to serve as a model for the surrounding community.

- Kailula 'Smart Growth' Community Development Planning -- working closely with Kaneohe Ranch, the Castle Foundation and community groups to explore 'smart growth' alternatives for this growing windward community that will preserve the surrounding ecological régime and promote economic vitality and livability in Kailua town.

- Ewa Development Plan and the Kapolei Urban Design Plan Review -- working closely with the EPA's Smart Growth Program, the City and County of Honolulu, brought in experts from around the country who have worked with the regulators, developers and community leaders to improve conditions in the areas of subdivision design, transportation, economic development, environmental preservation and overall livability in Kapolei, Oahu's "2nd City".

- Department of Hawaiian Homelands -- DHHL could be the largest home builder in Hawaii in the next decade. The center will assist the Hawaiian community, architects and planners identify long-term, cost effective design and planning strategies to improve the community design and residential design in DHHL developments, and in bringing the Center's resources to other low income, self-help and nonprofit housing groups.

- Military bases in Hawaii -- The military will be significantly expanding its housing and other facilities in Hawaii. This is a prime opportunity to work with federal agencies to improve conditions on the bases and demonstrate community development and building design solutions beyond the bases.

The new Center will also serve as the parent organization for two University of Hawai'i sponsored National Centers:

- The EPA Labs21 Center of Excellence in Marine-Based Laboratories – This new National Center of Excellence, designated by EPA, focuses on energy, water, and waste management issues associated with the design, construction, and operation of marine laboratories, which present the most challenging problems and opportunities for achieving sustainability in building design.

- The Hawaii Energy and Resource Center. This center, in the development stage, would offer sustainable building design strategies to the local and regional professional community, house exhibits on energy and resource efficient and renewable energy products and design methods and provide educational outreach to the local and regional general communities.

U.H. Partners:

Working with the new Center are a number of University partners who have pledged their support and active participation in furthering the goals and objectives smart building and community design. These include the U.H.:

• Sea Grant College Program and the School	• School of Travel Industry Management

of Ocean & Earth Science & Technology (SOEST)	
• School of Architecture	• College of Business Administration
• Office of the President, Dir. of Capital Improvements	• Hawai‘i Institute of Marine Biology
• Office of the Vice Chancellor for Administration	• College of Tropical Agriculture & Human Resources
• College of Social Sciences, Department of Urban and Regional Planning	• College of Engineering
• U.H. Office of Sustainability	• William S. Richardson School of Law

Administrative Structure:

The Center will be administered through the University of Hawai'i Sea Grant College Program within the School of Ocean & Earth Science & Technology (SOEST). U.H. Sea Grant will provide support for a chief administrative officer, as well as handling all of the fiscal accounting and reporting requirements of the Center.

While the Center will be administratively housed in the U.H. Sea Grant College Program, overall policy and program direction will be provided by a Center Director who is a member of the faculty of the U.H. School of Architecture.

An Advisory Board will be established to provide an outside perspective on the operations and directions of the Center. This Board will be composed of representatives from the 'Center for a Sustainable Future' (CSF), local architectural/engineering firms, community developers, and the Deans of the participating U.H. schools and departments. The Board will meet annually (and as needed) to review the work plan and project activities of the Center.

Contact Information:

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