

# THESES AND PROFESSIONAL PROJECTS ABSTRACTS

## MASTER OF CITY AND REGIONAL PLANNING, CAL POLY SAN LUIS OBISPO

*Although the CRP Department offers a final comprehensive planning studio as an option for MCRP students who prefer not to do a thesis or an independent project, the flow of quality individual research work continues. The following master's theses and projects were defended in 2008, and both the CRP department and Cal Poly's Kennedy Library hold copies for consultation.*

### **Balancing the 'Green Community' a Cost Benefit Analysis of LEED for Neighborhood Development.**

Daniel Ross

Green building is a growing trend in the country and around the world. The Leadership in Energy and Environmental Design (LEED) rating system developed by the US Green Building Council (USGBC) has become the standard in the industry. While extensive research has been conducted on LEED for New Construction (LEED NC) such research has yet to be conducted at the neighborhood level (i.e. LEED ND). This thesis examines the LEED ND rating system's financial feasibility and marketability through the analysis of four LEED ND registered projects. For each case study additional costs and benefits associated with potential certification are examined through interviews with building professionals and city planning officials, as well as surveys of San Francisco home buyers.

### **Regional Land Use Planning for Water Quality in the Pismo Cree Watershed: Recommendations on Policy and Regulations.**

Nicole L. Smith

Land uses have direct implications for surface and near shore water quality. Federal and State agencies are encouraging the use of a watershed approach to balance community growth and the use of natural resources. This study focuses on the land use impacts on the Pismo Creek watershed (the County of San Luis Obispo and the City of Pismo Beach) in order to increase awareness among decision-makers of the connections between land use and water quality, and the policy and regulatory solutions to improve and protect water resources. Existing policies and regulations were evaluated at the watershed and site scales. A code and ordinance worksheet by the Center for Watershed Protection was used to evaluate the management of land use and stormwater at the site scale. Land management on a watershed scale was evaluated using three land use strategies for water quality protection: land preservation, critical ecological area protection, and minimized land disturbance. The findings informed the development of recommendations on policy and regulation in conjunction with best management practices from other municipalities.

### **The Effect of Neighborhood Park Design on Gender Differences in User Behavior in San Luis Obispo, California.**

Lilly Schinsing

Public parks are in danger of losing social and cultural diversity due to poor design and bad management. Specific planning and design strategies have been reducing the ability of a large number of diverse people to feel welcome. While there is significant ethnic variation in usership and experience in urban parks, little is known about how female users as a group experience public park space. There is little knowledge of how women use urban park space, how they feel in these spaces,

and how the design affects space use. This study addresses these issues and presents findings on the effects of special features in public parks on gender differences in user behavior, particularly on female's space use. Results are presented based on the study of three parks in San Luis Obispo, California that utilized time-lapse behavior mapping, a survey of female and male adult park users, and a mail questionnaire sent to neighbors of study parks.

#### **San Francisco Sustainability: Mission Bay and Plaza Apartment Case Study.**

Alex David Friedman

This thesis identified the planning and management tools used by public and private agencies that contribute to sustainable development. San Francisco policies and practices are studied through the Building Environmental Quality Evaluation for Sustainability through Time (BEQUEST) assessment measure model. This model addresses the built environment at a range of scales, from building to policy planning. The study relies on city documents and information gained from interviews with public agencies, private developers, and non-profit organizations. Despite the enthusiasm for the City's framework for sustainable actions, there is a lack of funding and education necessary to promote sustainability, and more work is necessary to carry out the efforts at the City level. Two private projects of different scales were analyzed -Mission Bay and the Plaza Apartments- which have been learning tools for San Francisco and in response the city will become stricter on future projects.

#### **Sustainable Development: A Guide for Civil Engineers.**

Ginger Christine Andersen

While the planning profession has been researching and encouraging sustainable development through policies and design strategies, civil engineers have been asking how they can implement sustainability. From this inquiry, sustainable development has proliferated into the world of engineering, and has been incorporated into the goals and objectives of professional engineering organizations such as the American Society of Civil Engineers, American Association of Engineering Societies, Institution of Civil Engineers and the European Council of Civil Engineers. Implementing these goals and objectives however, requires education of both practicing and future generations of engineers. The purpose of this thesis is to develop a guidebook that outlines the concepts and practices of sustainability in an effort to strengthen the leadership role of civil engineers in this arena.

#### **Form-Based Code for Broad Street Village.**

Ashutosh Pant

The area comprising the Broad Street Corridor between Orcutt Road and Santa Barbara Avenue in San Luis Obispo is the object of this professional project. Originally a multi-cultural area and live-work place for railroad workers, this area is now serving the light-industrial needs of the city. Its central location, proximity to public facilities, and adjacency to the Railroad Historic District are driving the need to revitalize it as a multi-use residential neighborhood, supported by the City's General Plan policies and local residents. The project for it, titled Broad Street Village cannot be realized through rezoning because effective place-making requires a more comprehensive approach. The city decided to adopt the innovative form-based code as a governing document to guide the area's physical development. This thesis is divided into two sections. The first section comprises the background research on the planning area and on form-based codes. The second section comprises the development of the typical elements of the form-based code: the regulating plan, building envelope standards, streetscape standards and architectural standards.