

SUSTAINABLE DEVELOPMENT STANDARDS FOR BAJA, MEXICO



1. PROJECT SITING AND PLANNING

- Sensitive environmental zones
- Stable soils
- Infill opportunities
- Transit services
- Neighborhood Amenities
- Goods and services



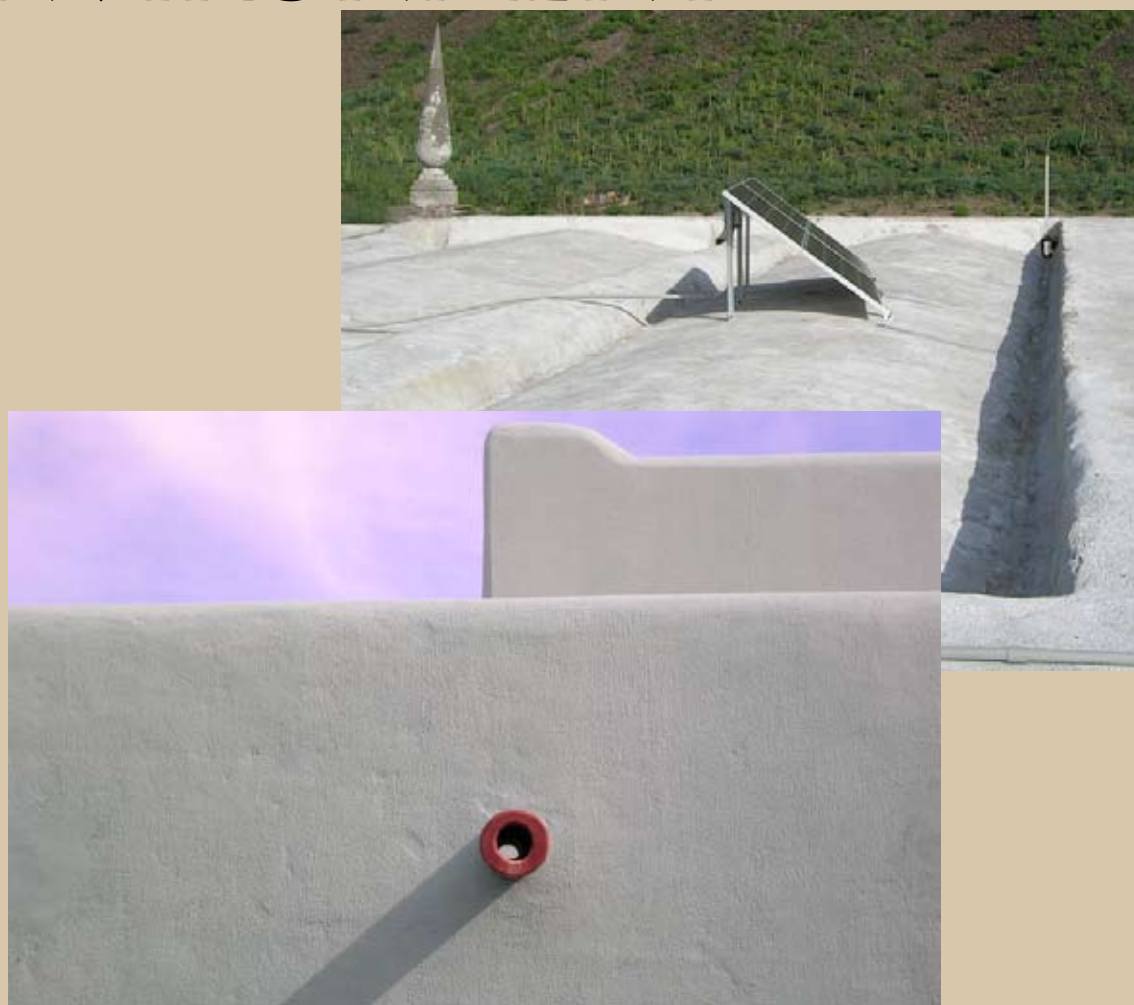
2. POTABLE WATER

- Energy conservation
- Ecosystem preservation
- Water conservation & management



3. ENERGY FOR BUILT ENVIRONMENT

- Carbon emissions
- Balance environmental trade-offs
- Local resources
- Solar design
- Minimize fossil fuel consumption



4. WASTEWATER

- Blackwater
- Greywater
- Public health and safety
- Irrigation and recharge



5. ACCESS AND TRANSPORTATION

- Pedestrian
- Non-motorized vehicles
- Connectivity
- Reduce air pollution
- Reduce energy consumption
- Maximum opportunity



6. LANDSCAPING, IRRIGATION AND NON-BUILDING STRUCTURES

- Minimal adverse impact
- Minimize energy use
- Minimize visual impact
- Protect wildlife
- Monitor surrounding ecosystems
- Minimize ground disturbance



7. GRADING AND DRAINAGE

- Natural drainage systems
- Reduce footprint
- Erosion control
- Natural plants and systems
- Capture and use stormwater



8. SOLID WASTE MANAGEMENT

- Reduce material consumption
- Reuse and recycle materials
- Compost bio-degradable materials
- Transport excess



9. CONSTRUCTION

- Minimize energy use
- Reduce water use
- Material resource management
- Safety and health of workers



10. OPERATIONS, MAINTENANCE, AND MONITORING

- On-going monitoring
- Minimize negative environmental impacts
- Produce positive economic and social impacts
- Limit toxic substance use



11. FIRE PROTECTION

- Protect health and safety
- Minimize use of potable water
- Limit environmental impact
- Integrated site design



12. WATERSHED RESTORATION

- Improve natural hydrologic condition
- Native plants and vegetation
- Improve water quality



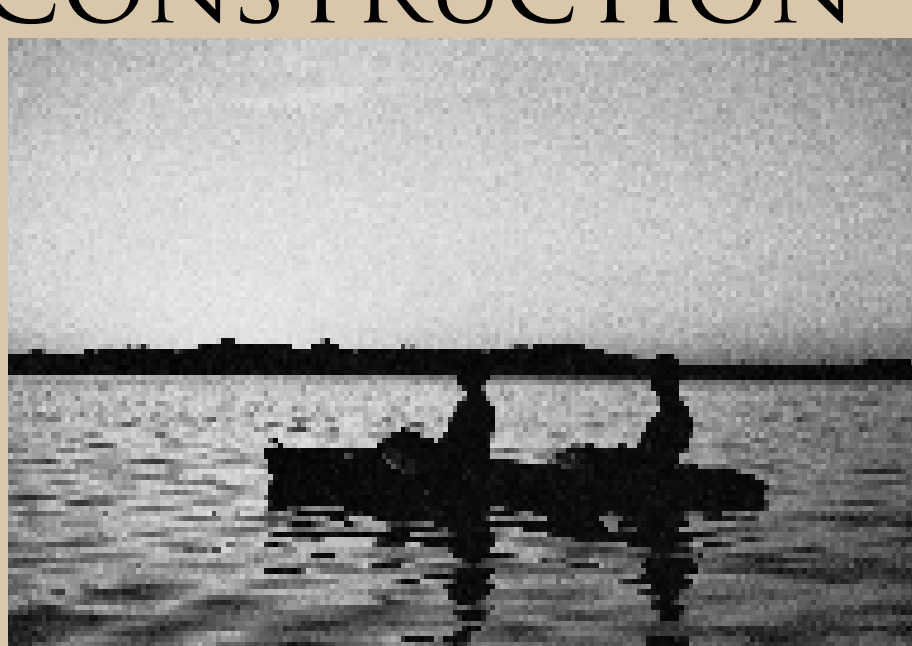
13. GOLF COURSE DESIGN

- Avoid disruption of natural environment
- Minimize pollution
- Minimal use of potable water
- Minimize use of toxic chemicals, pesticides, and invasive plant species



14. MARINA DESIGN AND CONSTRUCTION

- Minimize negative impact on habitats
- Improve or no impact on water quality
- Proper operation and maintenance



ABSTRACT

The Loreto Bay Foundation (LBF) of Baja California Sur (BCS), Mexico, has commissioned the creation of a comprehensive set of Sustainable Coastal Development Standards to be applied at a State level. The primary goal is to create clear regulations for responsible coastal development in a region experiencing rapid tourism development. LBF commissioned Sherwood Design Engineers to perform research, field reconnaissance, interviews, and ultimately the creation and implementation of these Standards. In addition to pursuing the general culture of sustainability, the project objectives are as follows:

- Protect and integrate built forms with the local environment;
- Maintain essence of the region with respect to scale and cultural heritage;
- Protect the valuable marina areas, such as the Loreto Bay National Marine Park;
- Educate the community on the practice of sustainable development;
- Generate political support leading to adoption of Standards as a governing document;
- Allow for measured economic growth.

Research was performed by accessing best practices applied throughout the international community while performing reconnaissance to understand existing practices in BCS. To facilitate the implementation of these Standards, an interpretive document was developed informing users and decision makers of the writing process for Standards and the strategy of integrating these Standards into the BCS development review process. The result is a set of documents identifying appropriate methods, justification, and requirements in executing sustainable development in a coastal setting while comparing these methods to existing law. The project team is currently continuing their efforts by creating a guide for developers based on the Standards for the State government to distribute to potential applicants.

BACKGROUND

SHERWOOD DESIGN ENGINEERS

Sherwood Design Engineers is a group of civil and environmental engineers, planners, and ecologists based in San Francisco and New York. We have built an international reputation by providing engineering services and design solutions which reflect our deep commitment to executing well-planned, sustainable alternatives for our world-wide communities. Our firm has a history of pioneering exceptional designs on a range of complex projects, and we are a leader in the established arena of green building design and ecological master planning. Our ability to integrate the aesthetic, environmental, technical, political, and economic considerations of a project into high-quality, successful designs is reflected in the consistent acclaim for our firm's work.

LORETO BAY FOUNDATION

The Loreto Bay Foundation (LBF) was established to support and fund local projects in the community of Loreto, Baja California Sur and in the Loreto Bay National Marine Park. The project must be "organized and operated for charitable purposes" (i.e. not a for-profit venture). Project staff are allowed to earn a fair salary for their work on the project, but investors are not allowed to make a profit from the project. The principal beneficiaries of LBF are the Loreto Bay Company and the residents of Loreto Bay.

BAJA CALIFORNIA SUR

Booming Tourism

Led by Cabo San Lucas, Loreto and La Paz soon to follow

Economic Development Model –FONATUR



LORETO

- Industry
- Fishing
- Tourism (sport fish/diving)

LA PAZ

- Fourth Largest Municipality in Mexico
- Highest Standard of Living in the Mexican Republic
- Under UNESCO protection
- Industry
- Eco-Tourism

CABO SAN LUCAS

- Accessible due to heavy infrastructure push in 1974 by Mexican government
- Experiencing massive growth
- Industry
- Tourism (sport fish/diving)

CONSEQUENCES

Rapid Development

Large Population Migration (20 residents-1 hotel room)

Limited Resources - Mainly Water (7-12"/year)

Negative Impacts

Environmental Degradation

Inadequate Resources

Poverty-Social Injustice

RESEARCH AND FIELD RECONNAISSANCE



PUBLICATIONS

- LEED (NC – ND)
- Municipal Resources (Alameda County, Bamberton, ect.)
- International Resources (e.g. Audubon Society)
- SDE Internal Publications
- St Kitts Development Standards
- Desalination Best Practices Publications
- Other technical sources



FIELD RECONNAISSANCE

- Existing practices in Loreto
- Field Interviews
- United States Green Building Council LEED (NC – ND)
- Municipal Resources (Alameda County, Bamberton)
- International Resources (Audubon Society)
- Internal resources

GUIDING DOCUMENT AND STANDARDS

GUIDING DOCUMENT

- Purpose and Process
- Types of Standards
- Provides a link to existing development review process/documentation

SUSTAINABLE COASTAL DEVELOPMENT STANDARDS

- Objective (Should, in order to...)
- Performance Based (30% of developable area shall....)
- Prescriptive (All developers are required....)

WHERE THE STANDARDS ARE GOING

- DRAFT is complete and submitted to Client, LBF
- CEMDA working to make Standards Legally Relevant
- Translated and provided to State Government for review and comment
- Cabinet member workshop in San Francisco to produce a development guide to be handed to potential developers
- CEMDA currently working to draft ordinances governing desalination practices
- Refinement based on comments from State, various NGOs and
-Eventual submittal to the Federal Government via SEMARNAT, the Mexican department of the environment

CONSENSUS BUILDING

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Currently working to set up meetings and interviews in Loreto and La Paz to build relationships between Local NGOs, Ecological groups and the local government. Trying to moderate comments from all perceived stakeholders in order to gain unanimous support.

CONSENSUS PARTNERS

- Municipal Level (Loreto Ayuntamiento) Minister of Planning
- State level (B.C.S. Government) Director of Urban Planning and Ecology
- Federal Level (SEMARNAT)
- Niparaja
- GEA - Grupo Ecologico
- SEMARNET - Secretaria de Medio Ambiente y Recursos Naturales
- CEMDA - Centro Mexicano Derecho Ambiental



LA PAZ

LORETO

CABO

AUGUST 2006

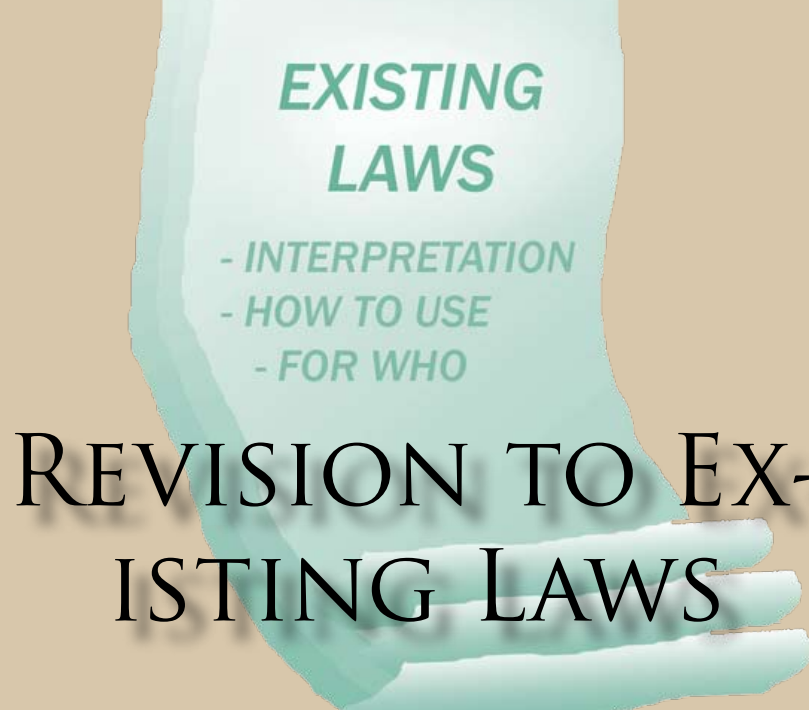


DEVELOPMENT STANDARDS TECHNICAL PAPER

DECEMBER 2007



DECEMBER 2008



OCTOBER 2009



OCTOBER 2010



CREATION OF NEW DEVELOPMENT LAW

