Design for Survival: Sustainability for Planet and Structure

Steven M. Lanoux
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The University of Texas Marine Science Institute
Port Aransas, Texas

• Year-round, full-service research institute and graduate school

• Located on Mustang Island between the Gulf of Mexico and Corpus Christi Bay with direct access to the Texas lagoons

• Manage the 185,708 acre NOAA Mission Aransas National Estuarine Research Reserve

• NERR headquarters and MSI expansion building under construction
Sustainability 101: Survival of Structure

- Extreme weather events
- Daily assault by salt spray, wind-borne sand, high humidity, tropical UV
- Introduction of sea water inside building envelope
Sustainability 102: Stewardship of Limited Resources

- Gozintas
- Gozouttas
- Minimum lifetime footprint
- Esthetics count
- Ecosystem includes people
Structure

- Designed for hi-CAT storm survivability
- Robust materials to withstand daily assault
- Cost-to-construct less than cost-to-maintain over the lifespan of the building
• Innovative features will challenge regulatory agency engineering review

• The “proof of concept” is undesirable

• Our children will know if we got it right
Planet

- Capture what is offered
- Passive mitigation through design
- LEED Gold R Us
Planet – and People

- Expanded concept of “service” to the building’s occupants
  - Views
  - Natural light
  - Envelope shelter

- Maintainer-friendly through materials selection, automated monitoring and self-diagnostics

Minimum energy profile: R-50+ exterior walls
Educate

• Building itself is a teaching tool for stewardship

• Landscaping teaches xeriscaping and uses indigenous regional species

• Celebrated by local population
Conclusion

• We can commit to sustainable structures that are both survivable and environmentally wise

• Failure is not an option
Steven M. Lanoux, Ph.D.
UTMSI
750 Channel View Drive
Port Aransas, TX 78373-5015

Email: lanoux@mail.utexas.edu

Phone: 361.749.6760