



CATIS-MEXICO

CENTER FOR APPROPRIATE TECHNOLOGY AND
INDIGENOUS SUSTAINABILITY

SUMMER 2011 SUSTAINABILITY SERIES

SAN MIGUEL DE ALLENDE, GTO, MEXICO

BUILDING SYSTEMS FOR THE DEVELOPING WORLD

CROSS GABLE THIN SHELL CONCRETE ROOF AND NATURAL PLASTERS

with James Hallock, Jeff Rottler and Dylan Terrell
June 5-11, 2011



COMPRESSED EARTH BLOCK PRODUCTION AND CONSTRUCTION SURVEY

with James Hallock and Jeff Rottler
June 13-17, 2011

CEB LABORATORY CONSTRUCTION PRACTICUM
with James Hallock, Jeff Rottler and Leonardo Eufrazio
June 12-24 and June 27-July 1, 2011



AGRO-ECOLOGY FOR THE DEVELOPING WORLD



APPLIED LANDSCAPE WATER HARVESTING AND AGRO-ECOSYSTEM DEVELOPMENT

with Craig Sponholtz
June 6-10, 2011

MAKING MORE WITH MICROBES SOIL MICROBIOLOGY FOR REGENERATIVE AGRICULTURE

with Doug Weatherbee
JUNE 13-17, 2011



SMALL SCALE SUSTAINABLE FARMING FOR RURAL AND URBAN LOCALES

with Luc Monzies and Jen Ungemach
June 20-24, 2011

HOLISTIC LAND MANAGEMENT USING GRAZING ANIMALS TO REGENERATE LANDS IN THE DEVELOPING WORLD

with Owen Hablutzell
June 27-July 1, 2011



**COST/WEEK: \$625/\$525 PER WEEK - REGULAR/EARLY BIRD TUITION (PAID BY MAY 7TH)
\$15 - 3 MEALS/DAY. \$10-DORM/NIGHT. \$5 - CAMPING/NIGHT.
SIGN UP EARLY FOR THE FULL MONTH & SAVE \$600
REGISTER AT www.iCATIS.org -SCHOLARSHIPS AVAILABLE-
FOR MORE INFO, CONTACT: informes@tierraycal.com**



CROSS GABLE THIN SHELL CONCRETE ROOF AND NATURAL PLASTERS WORKSHOP

INSTRUCTORS:
**JIM HALLOCK, JEFF ROTTLER
DYLAN TERRELL**

**JUNE 5-11, 2011
SAN MIGUEL DE ALLENDE, GTO, MEXICO**



During the course, theory, technology and benefits of Thin Shell Concrete Roofs will be explained in detail for all aspects from foundation through finish. This includes how to find appropriate local materials and how to adjust formulas, materials and methodologies to meet local circumstances. Participants will build a thin shell concrete structure for the Institute, making a valuable contribution to the mission of CATIS Mexico, while gaining detailed hands- on experience.

In Natural Plasters, we will cover the fundamentals of clay and lime plasters including theory, materials, application.





Day 1:

Morning: Final coat on existing structure.

Afternoon: Begin panels from scratch: measure/cut.

Day 2:

Morning: Stretch cloth/wire across three panels.

Afternoon: Grout and seal edges of three panels.

Day 3:

Morning: Place three panels on foundation and tie.

Afternoon: Concrete ridge, measure 4th panel.

Day 4:

Morning: Construct 4th panel.

Afternoon: Place and tie 4th panel, apply first coat.

Day 5:

Morning: Apply second latex coat.

Afternoon: Begin Natural Plasters Workshop, overview, materials and wall preparation.

Day 6:

Morning: Apply third latex concrete coat.

Afternoon: Natural Plasters: Formulas, adhesion, interior and exterior base coat application.

Day 7:

Morning: Apply final latex concrete coat.

Afternoon: Natural Plasters: Clay and lime finishes.



Simple panel design with local material.

COST:

\$625/\$525 USD - Regular Tuition/Early Bird Tuition (paid by May 7th)

\$15 USD - 3 meals/day.

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COMPRESSED EARTH BLOCK PRODUCTION AND CONSTRUCTION SURVEY

INSTRUCTORS:
JAMES HALLOCK and JEFF ROTTLER

JUNE 13-17, 2011
SAN MIGUEL DE ALLENDE, GTO, MEXICO



This 5-day seminar is an introduction to the construction system of compressed earth blocks led by an industry leader and pioneer, James Hallock. James is a wealth of information with over 40 years in the construction industry and 17 years dedicated to the promotion of CEBs as a solution to the housing crisis. James will walk you through his CEB construction manual with a 1/2 day of classroom lecture and discussion and then practical fieldwork relating to machine selection, soil selection, stabilization, mixing, block production and the A-Z's of building with CEBs. This is an excellent precursor to the two-week CEB Laboratory Construction Practicum which will further develop one's skills, knowledge and confidence to build with earth, tread lightly on the planet and appreciate the use of appropriate technology. The Practicum involves constructing the walls of the laboratory section of the main campus building of the CATIS-MEXICO (Center for Appropriate Technology and Indigenous Sustainability).



Day 1:

Morning: History, advantages and disadvantages of building with CEBs and earthen construction. CEB construction manual review.

Afternoon: Soil selection and processing, field testing, stabilizer selection, pH testing.

Day 2:

Morning: Formulas for determining the right mix (dry weight) and conversion formulas for field production (volume).

Afternoon: Machinery selection, operation and maintenance.



Day 3:

Making the mix, CEB manufacturing with different machinery, curing and testing.

Day 4:

Morning: Building design, orientation, seismic reinforcement considerations. CEB quantity calculations, material and cost calculations.

Afternoon: foundations, grade beams, mortars.

Day 5:

Story poles, water leveling, block laying, plumbing and electrical, window and door bucks, lintels, arches, nichos, bond beam reinforcement, roof attachment.

COST:

\$625/\$525 USD - Regular Tuition/Early Bird Tuition (paid by May 7th)

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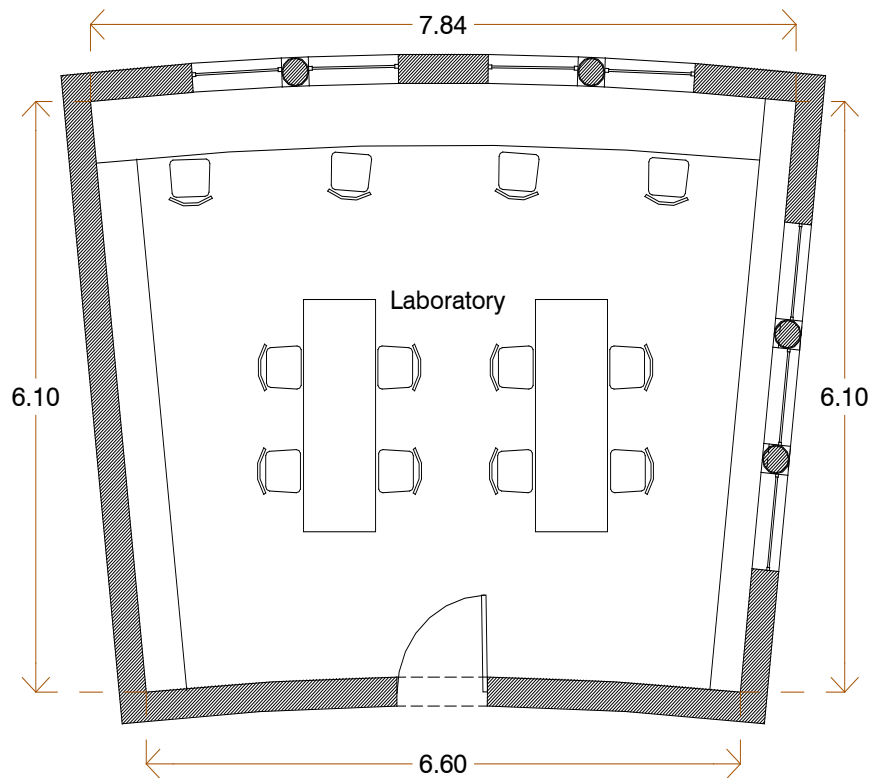
For more info, please contact: informes@tierraycal.com



CATIS CEB LABORATORY CONSTRUCTION PRACTICUM

INSTRUCTORS:
JAMES HALLOCK, JEFF ROTTLER
and
LEONARDO EUFRACIO

JUNE 20-24 and JUNE 27-JULY 1, 2011
SAN MIGUEL DE ALLENDE, GTO, MEXICO



Participants will have the opportunity to help build the laboratory section (6.10m X 7.22m) of the CATIS main campus building. Our goal is to complete the walls and pour the bond beam in preparation for the boveda Mexicana (Mexican vault) that will later be made with CEB cuñas. We'll be focusing on moving the construction forward starting with waterproofing, seismic and structural reinforcement, wall building, doors, windows and arches, lintels, bond beam, domes and vaults, and electrical and plumbing installation. Once the bond beam is poured, we will build a CEB Mexican vault on a smaller structure nearby.



Day 1-2: Mobilization, Getting Started

Water leveling and preparation of grade beam, placing story poles and door buck, seismic considerations, buried castillos, mortar and mixing, lay first leveling course of CEBs, start laying CEBs.

Day 3-4: Up with the Walls

Electrical outlet placement, lay CEBs, seismic ladder reinforcement.

Day 5: To the Windows

Lay CEBs to achieve sill height, place window bucks, place switch boxes.

Day 6: Onto the Scaffolding

Window arches, continue laying CEBs.

Day 7-8: Bond Beam, Baby!

Reach the bond beam, tie steel for bond beam, set forms for bond beam, pour bond beam with compression ring for CEB Mexican vault.

Day 9-10: CEB Mexican Vaults

Introduction to CEB Mexican vaults, calculating curvature, starting the squinches, the meeting of the squinches, closing in, skylights, cúpulas, moldura and other details.



COST:

\$1250/\$1050 USD - Regular Tuition/Early Bird Tuition (paid by May 7th)

\$15 USD - 3 meals/day.

\$10 USD - Dorm/night.

\$5 USD - Camping/night with use of showers and bathroom.

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APPLIED LANDSCAPE WATER HARVESTING AND AGRO-ECOSYSTEM DEVELOPMENT

JUNE 6-10, 2011

SAN MIGUEL DE ALLENDE, GTO, MEXICO

INSTRUCTOR:

CRAIG SPONHOLTZ

Craig Sponholtz earned an M.A. in Agro-Ecological Restoration from Prescott College and studied Permaculture at Bill Mollison's Tagari Farm in Australia. He spent a decade with the U.S. Forest Service in New Mexico and Arizona working in Wildland Fire Management and Fire Use. Craig has had extensive training and hands-on experience in passive water harvesting, erosion control and stream restoration that is well complimented by a background in fine art sculpture and ceramics. Craig founded Dryland Solutions in 2003 and continues to design and implement watershed restoration projects throughout the Southwest. He is an expert heavy equipment operator specializing in low impact techniques and artistic in-stream boulder masonry. Craig teaches a wide variety of watershed restoration techniques that foster beneficial relationships between people and the watersheds they live in.



This is a comprehensive 5-day course that will instruct participants in reading the landscape and understanding how water moves across landforms. Students will learn to apply that knowledge by identifying the best opportunities to harvest runoff that can be used for everything from agricultural production to ecological restoration. After establishing an understanding of surface hydrology fundamentals, students will learn to perform thorough watershed assessments to identify the symptoms and causes of degradation as well as sweet spots in the landscape that benefit greatly from small improvements.

Once students learn how to manipulate and manage moisture storage in the landscape, they will then investigate the many ways that extra moisture can be utilized for agricultural production. The final result of this course will be a fully-integrated collaborative demonstration project that will be designed, planned and constructed during the class.

COST:

\$625/\$525 USD - Regular Tuition/Early Bird Tuition (paid by May 7th)

\$15 USD - 3 meals/day.

\$10 USD - Dorm/night.

\$5 USD - Camping/night with use of showers and bathroom.

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MAKING MORE WITH MICROBES SOIL MICROBIOLOGY FOR REGENERATIVE AGRICULTURE

INSTRUCTOR:
DOUG WEATHERBEE

JUNE 13-17, 2011
SAN MIGUEL DE ALLENDE, GTO, MEXICO



Doug Weatherbee is a Certified Soil Foodweb Advisor and owner of SoilDoctor.org. Consulting with small, medium and large scale farms and ranches in Latin America and the United States; he uses an applied soil microbiological (eco) systems approach to transform soils degraded by industrial chemical agriculture and even conventional organic farming, into regenerative microbiological agricultural systems. You will learn how to enhance and nurture soil microbiological ecosystems for agricultural and growing benefits and possible climate change mitigation results.

CLASSROOM AND ON-SITE FIELD TRAINING

Whether you are a cattle rancher, small, medium or large scale farmer, this seminar will help you unearth the potential of your land. You'll learn valuable tools and techniques to help you turn your soil into rich and fertile ground through composting, creating composting tea, and by gaining a better understanding of the basics of soil microbiology.



Control non-treated organic



Microbiological treated organic



DAY 1

- Soil Microbiological case studies
- Soil: Sand, silt, clay and humus
- Soil: Microbiological soil food web
- Plant Diseases and Pathogens: It's a numbers game
- Ecosystem Succession: Why does soil microbiology matter to our plants?
- Review So Far: SoilDoctor soil care take-home principles.

DAY 2

- Compost Type Introduction: Thermophilic, static and vermicomposting
- Carbon: Nitrogen ratio of compost inputs; bacterial or fungal dominated compost
- How to Make Thermophilic Compost
- How to make Static Compost
- Worm Power: Vermicomposting
- Review So Far: SoilDoctor soil care take-home principles
- Practical "Get Your Hands Dirty"

DAY 3

- Reversing Ecosystem Succession: Disturbances to the soil and its consequences
- Soil Compaction: The problem of no oxygen
- Microbiological Driven Nutrient Retention in the Soil
- Microbiological Driven Nutrient Availability for Our Plants
- Review So Far: SoilDoctor soil care take-home principles

DAY 4

- Actively Aerated Compost Teas and Extracts
- Tea Brewer and Extractor Design Examples
- Compost Tea and Extract Application Equipment
- Compost Tea Application Rates and Times
- Practical "Get Your Hands Dirty"

DAY 5

- Soil Microbiology Lab Test: What it tells us
- Soil Chemical Test: What it doesn't tell us
- The Carbon Cycle and Soil: Green house gas emission, mitigation and sequestering
- Biogeochemical Nutrient Cycling
- What's a Typical Microbiological Growing Season Look Like?: Some project planning
- So how would this work in my ranch or farm?
- Qualitative Microscope Set-up, Usage, Sampling
- Microscope Identification of Soil Food Web Microbes

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SMALL SCALE SUSTAINABLE FARMING FOR RURAL AND URBAN LOCALES



JUNE 20-24, 2011

SAN MIGUEL DE ALLENDE, GTO, MEXICO

INSTRUCTORS:

LUC MONZIES and JEN UNGEMACH

Luc Monzies comes from a long line of biodynamic farmers and activists and has practiced organic food production around the world in a wide-range of bio regions. Luc joins his passion for building and farming to design sustainable systems that seamlessly combine living with food production.

Jennifer Ungemach works as the Educational Programs Coordinator with the non-profit organization, Vía Orgánica. Her training includes a technical background in Biointensive Agriculture and academic studies in Sustainable Agriculture and Agroecology focused on how organizations and movements can support healthy food production.

A solution-based course, this program teaches skills in small-scale organic food production for both urban and rural dwellers. Participants will have the opportunity to link practical skills in variety of locales, as well as analyze how overarching global issues like climate change and food scarcity can be confronted.



Day 1

AM: Global focus: Climate change and globalization issues and how they affect deteriorating human and environmental health in Mexico.

Local focus: Organic farm movement's strengths and weaknesses.

PM: Organic food production activities in preparation for Day 2.

Day 2

Day 2: Analyze and integrate food production into residential spaces. Create microclimates that benefit plants and humans alike and revitalize underutilized spaces (rural and urban contexts). Integrate recycled and natural materials into real hands-on examples.

Materials used in the course include recycled and natural materials, buried clay pot irrigation, and biologically active soil.

Day 3 Explore Biointensive Agriculture as an alternative for food-growing. Theoretical and practical components in bed preparation, compost, seed propagation, and transplanting at the Vía Orgánica Demonstration Garden

Day 4

AM: Get to know an urban garden space at the Vía Orgánica Store's rooftop garden. Analyze how to plan small-scale food production, including how to incorporate associations and rotations, as well as how to have food and compost materials year-round.

PM: Hands-on workshops in open-pollinated seed-saving and organic insect and plant disease control strategies.



Day 5

AM: Field trip to CEDESA, a rural development training center in neighboring Dolores Hidalgo with forty years of experience of working with Mexican farmers in the social struggle to attain a dignified and sustainable life. CEDESA is a strategic partner of CATIS-Mexico, the host organization for this workshop series.

PM: Collectively design and implement a new area in CEDESA's existing organic garden.

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HOLISTIC MANAGEMENT USING GRAZING ANIMALS TO REGENERATE LANDS IN THE DEVELOPING WORLD

**JUNE 27- JULY 1, 2011
SAN MIGUEL DE ALLENDE, GTO, Mexico**

INSTRUCTOR:
OWEN HABLUTZEL

Owen Hablutzel is a consultant and educator facilitating the design and implementation of Keyline, Holistic Management, and broad-acre Permaculture applications with farms, ranches, and non-profits engaged in land and resource management. Having lived and worked in Africa, Australia, and much of the western United States, Owen's focus is on helping his clients achieve their financial and land health goals. Owen currently serves as a director of the Permaculture Research Institute, USA.



New Mexico, after keyline

2008 © Hablutzel



New Mexico, before keyline

THE WORKSHOP

This 5-day workshop will change the way you see and manage your landscape, your farm operation and your future. You will learn a whole farm/whole ranch/whole system approach that provides you with key principles and practices to help design and manage whole landscapes for optimal health and create a sustainable future for generations to come. We will leverage the most effective tools and applied solutions from Holistic Management®, Keyline® Design and Permaculture Design for proven strategies towards an integrated whole farm/ranch design and management plan. Students who wish to bring their land maps and data can work in class to develop a comprehensive plan for their land by the end of the course using these Whole Systems Strategies for Land Management Success.

KEY BENEFITS OF TAKING THE COURSE

- Generate an inspired vision for your landscape
- Create a Holistic Goal and learn decision-making skills that mean a better bottom line for your whole operation
- Reduce dependency on outside inputs while improving your quality of life
- Engage with whole landscape water harvesting, using Holistic Management and Keyline techniques, to get the most from every drop
- Discover secrets of rapid creation of healthy, biologically active topsoil
- Learn to connect and integrate farm infrastructure, layout and functions for improved efficiencies and synergy, etc.



before

HM Planned Grazing

after



The land on the right is Holistically Managed.
Both areas receive the same rainfall, with no irrigation. **Look at the difference in erosion.**

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**Center for Appropriate Technology and
Indigenous Sustainability – MEXICO**

SAN MIGUEL DE ALLENDE, GTO, MEXICO

CATIS-Mexico was created to address the challenges facing economically limited families and communities in the global south, rural and urban alike. CATIS-MEXICO is a strategic alliance between **Instituto Tierra y Cal, A.C.**, “Earth and Lime Institute”, **Ingenieros Sin Fronteras México, A.C.**, “Engineers without Borders Mexico”, and **iCATIS** (International Centers for Appropriate Technology and Indigenous Sustainability), a U.S. based 501(c)(3) nonprofit organization.

**CATIS MEXICO SUMMER 2011
SUSTAINABILITY INSTITUTE**

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CATIS-MEXICO

The actual CATIS Center or Instituto will be a 7,000 sf earthen building constructed on a 23-acre parcel of land near San Miguel de Allende, GTO, Mexico. It will serve as the research, design and capacity building center serving the region and beyond.

In order to address social, economic and ecological sustainability on individual, community and regional levels, CATIS-Mexico provides technical research and development, as well as technical training and capacity building, to help facilitate and improve the sustainable practices initiated by local partners, such as Centro para el Desarrollo Agropecuario, A.C., "Center for Agricultural Development"(CEDESA). CEDESA is a campesino organization with more than 50 years of unique dedication to the social struggle against poverty, for a dignified and sustainable life, and ecological development in the northern Guanajuato region.

CATIS-Mexico builds on a foundation of regional knowledge of our participants and partners and relies on participatory planning. We work to assure social, economic and environmental sustainability. An important part of our work is to train the trainers and promoters from local and regional indigenous, campesino and economically limited communities as well as individuals and NGOs from elsewhere seeking to gain the skills useful in increasing the capacity of these communities to implement sustainable solutions.

For all projects we seek to create customized business plans that are economically self-sustaining following completion through the creation of career pathways, local business markets, micro-enterprises and other creative methods of community empowerment.

CATIS-MEXICO

Center for **A**ppropriate **T**echnology and
Indigenous **S**ustainability - **MEXICO**

Instituto Tierra y Cal, A.C.

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iCATIS

International **C**enters for **A**ppropriate **T**echnology
and Indigenous **S**ustainability

www.iCATIS.org

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