

Course A6310
Living Landscape
Eco-Technologies

Prof. Julia Watson
Term Spring 2015
Email jw2815@columbia.edu
Time Thurs 9-11am



War Khasis Living Bridges of Meghalaya, Cherrapunji, India
Source: Atlas Obscura

While the vernacular of the world's traditional and indigenous peoples has historically inspired innovation in the field of architecture, so far there has been minimal impact to the fields of urban and landscape design. Paying homage to Bernard Rudofsky's 'Architecture without Architects' on its 50 year anniversary, 'Living Landscape Eco-Technologies' similarly explores contemporary landscape eco-technologies alongside the landscape vernacular eco-technologies of indigenous and traditional peoples. This seminar offers an explorative comparison of advanced architectural material innovations and sophisticated vernacular constructions evolved through environmental symbiosis, lying hidden in the shadows of the remotest places on earth. We'll explore known high-tech systems and unknown low-tech systems through an architectural lens, drawing inspiration to suggest the material and landscape eco-technologies of the future.

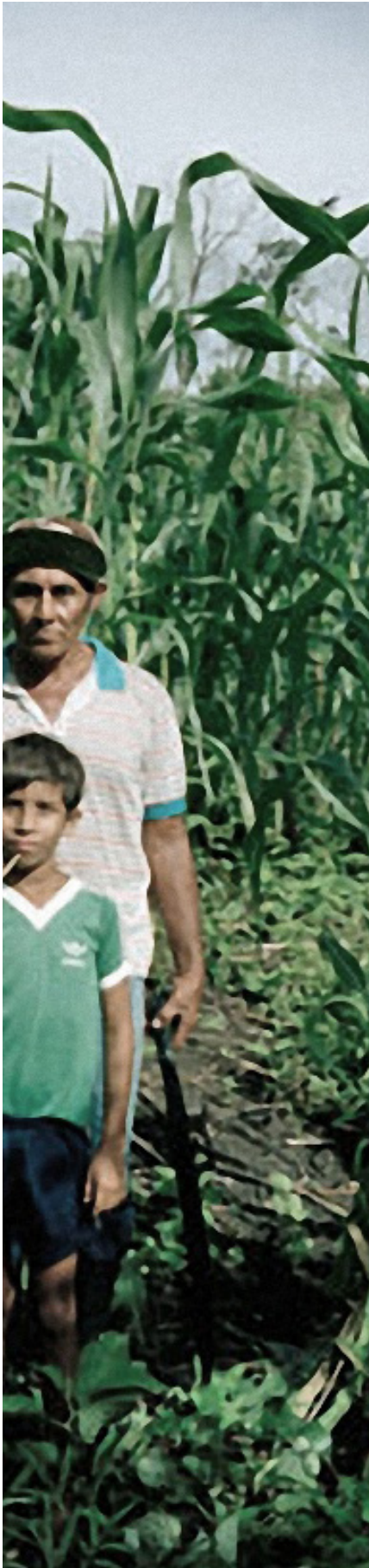
These living constructions will range in size from single river crossings to entire watersheds. Contemporary landscape eco-tech systems are examined at the material, system and the project scale, while indigenous eco-tech systems are explored at the material, module and ecotone scale. We'll explore living eco-technologies in three modules, which are fluid, growth and terrain. This seminar queries the many unique ways of living in harmony with nature that somewhere along the way, we in the western world have lost or forgotten. It endeavours to answer the insurmountably important question; what do indigenous and traditional people know that we once knew? This question is asked in the hope that we can understand how to use this ancient knowledge to solve some of today's most pressing environmental problems - this is the ultimate objective of the inquiry.



Palayan Rice Terraces Ifugao, Philippines

Course Calendar

Wk 1 22 Jan	Lecture 1: Traditional & Contemporary Landscape Eco-Technologies	Group Assignment
Module 1 - FLUID		
Wk 2 29 Jan	Lecture 2: <i>Indigenous Eco-Tech</i> River, Lake and Ocean Ecosystems	Discussion Readings
Wk 3 5 Feb	Lecture 3: <i>Landscape Eco-Tech</i> Hydrological Systems	Discussion Readings
Wk 4 12 Feb	Guest Lectures +POOL & Aershop	
Week 5 18 Feb 19 Feb	Recommended Lecture - Michael Ezban (Wed 2-4pm) Assignment 1 Presentations	Assignment PDF Submission
Module 2 - GROWTH		
Week 6 26 Feb	Lecture 4: <i>Indigenous Eco-Tech</i> Grassland, Wetland and Forest Ecosystems	Discussion Readings Assignment Hard Copy Submission
Week 7 5 Mar	Site Visit to Material Connexion: A materials consultancy of advanced, innovative and sustainable materials and processes.	
Week 8 12 Mar	Guest Lectures Francis Bitoni & Ted Ngai	
SPRING BREAK		
Week 9 26 Mar	Lecture 5: <i>Landscape Eco-Tech</i> Growth Systems	Assignment Crit & Interim Submission
Module 3 - TERRAIN		
Week 10 2 Apr	Lecture 6: <i>Indigenous Eco-Tech</i> Deserts, Tundra and Pyrotechnic Ecosystems	Discussion Readings
Week 11 Apr 9	Lecture 7: <i>Landscape Eco-Tech</i> Surface and Soil Systems	Discussion Readings
Week 13 Apr 16	Lecture 8: <i>Landscape Eco-Tech</i> Climatological Systems	Discussion Readings
Week 14 Apr 23	Assignment 2 Presentations	Assignment PDF Submission
Week 15 May 7	No Class Final Project Submission	Hard Copy + CD



Milpa, Mexico

Course Texts

Readings will compile a list of associated theories relevant to contemporary conversations regarding sustainability, ecology and design. The reading list will also offer the opportunity to identify new associations that establish the design field as a favorable venue for exploring the associations of sub-cultures of allied fields.

Reading lists associated with modules will be distributed at the commencement of the module throughout the semester.

Burkes, F. (1999). Sacred Ecology: Traditional Ecological Knowledge and Resource Management. Philadelphia, Taylor & Francis.

Margolis, L. and A. Robinson (2007). Living Systems: Innovative Materials and Technologies for Landscape Architects. Basel, Birkhauser.

Rudofsky, B. (1964). Architecture Without Architects: A Short Introduction to Non-pedigreed Architecture. New York, Doubleday.

Blaine Brownell (2006). Transmaterial: A Catalog of Materials that Redefine Our Physical Environment. New York, Princeton Architectural Press.

Material Connexion <http://www.materialconnexion.com/>
Log In available through Columbia Log In

Weekly Readings

MODULE 1

Week 1

F. Burkes, *Sacred Ecology: Traditional Ecological Knowledge and Resource Management*. Philadelphia, Taylor & Francis, 1999. Chs. 1-4.

Margolis, L. and A. Robinson (2007). *Living Systems: Innovative Materials and Technologies for Landscape Architects*. Basel, Birkhauser. Chs. Introduction.

K. Shannon and B. De Meulder (eds), "Water Urbanisms as a Way of Life" in *Water Urbanisms East from UFO: Explorations in Urbanism* (Zurich: Park Books, Spring 2014)

Week 2

K. Frampton, "Towards a Critical Regionalism" in *The Anti-Aesthetic: Essays on Post-modern Culture*, 2002

M. Heidegger, *The Question Concerning Technology and Other Essays*, New York: Harper and Row, 1977.

C. S. Hollings, *Panarchy*, Washington: Island Press, 2002.

Rudofsky, B. (1964). *Architecture Without Architects: A Short Introduction to Non-pedigreed Architecture*. New York, Doubleday. Chs. Preface.

Week 3

Guest Lecturers texts found in Columbia Courseworks folder



Ma'dar Hadfir Floating Islands, Iraq

Assignments

The seminar offers a forum for architecture and landscape to explore, discuss and document innovative operations from an emergent field of conservation and ecology. The seminar will generate a unique taxonomy of case studies and precedent technologies that could be adapted to diversify the technologies currently available, ultimately exploring a new sub-field of landscape architecture that identifies vernacular innovation as emerging landscape eco-technology. The assignment work is intended to compose the content of a future publication.

Assignment One

Eco-Technology Investigation

Choosing either to explore an Indigenous Eco-technology or a Contemporary Landscape Eco-technology, the class will split into two groups and students will work individually to research and catalogue an innovation through the lens of the three environmental systems defined as the seminar modules, Fluid, Growth and Terrain. The analysis will be presented as a series of technical black and white annotated line drawings including; plan, section and exploded axon along with images and text.

Assessment	In-class presentation presenting individually
Presentation	Visual Essay and essay submission Physical Display + Catalogue [details to be announced in class]
Grade	30% of semester

Assignment Two

New Materialologies

Students will partner as one Indigenous Eco-technology and one Contemporary Landscape Eco-technology that have a potential for symbiosis to formulate a hybrid material logic.

Assessment	Interim submission + In-class final presentation + Final sub
Presentation	Catalogue of materials and concept proposal [details to be announced in class]
Grade	20% interim + 50% final

Assessment Summary

Week 5:	Assignment 1 Presentation and PDF Submission	15%
Week 6:	Assignment 1 Hard Copy Submission	15%
Week 9:	Interim Submission	20%
Week 14:	Assignment 2 Presentation and PDF Submission	40%
Week 15:	Final Submission + CD's of Final Project and a hard copy submission	10%

Late Work

All assignments are to be handed over at the conclusion of class on the specified day. Late submissions will result in a 5% deduction (of each assignment's total grade) per business day. In the case of illness or other special circumstances, notification should be given to the Instructor and the Program Officer as soon as possible and before the deadline has been reached. Late work after the final submission date, May 7th is not acceptable without prior written permission from the Professor.

Attendance Policy

Absences will require prior approval or notification to the Instructor if circumstances pervade on the day of class. Lack of attendance and lateness can contribute to a downgrade of the final project submission grade, unless prior approval by the Instructor. Students are expected to arrive to class punctually and be prepared to engage energetically with the class. Missed assignment submission or presentation without prior notification will result in a Fail.



Maasai of the Maasai Mara, Kenya, Africa

Guest Speakers*

1. Friends of + POOL Friends of + POOL is led by Kara Meyer, co-founders and designers Archie Lee Coates IV and Jeff Franklin of PlayLab; Dong-Ping Wong and Oana Stanescu.

Lecture - Doing Something Big When No One Asks You To Do Something Big

In the summer of 2010, Family and PlayLab proposed something that had never been done before anywhere in the world: a floating, water-filtering pool in the East River. Launched as an idea, the thought quickly became a project that spread fast. After 4 years, it has received widespread international attention, raised almost \$500K primarily through Kickstarter, successfully tested a filtration concept in the Hudson River and launched a real-time water quality dashboard with Google. "Doing Something Big When No One Asks You To Do Something Big" looks back on 4 years of research and development of + POOL charting the project from idea to pool, sharing some of the project's most interesting discoveries to date.

2. Takuma Ono Director, Aershop, Founder, OpenAer Catalog, Creative Director, Verdant

Lecture - Dredge Economies: Between Technocentrism and Ecocentrism

Once upon a time, during the Anthropocene period, mechanical vessels called container ships facilitated the exchange & transport of human labor and natural resources between unique geographic points on the biosphere. Collectively, these exchanges formed a worldwide global bazaar network (WWGBN). This network, positively reinforced by what it accomplished, effectively functioned to transfer leisure, longevity, and security from the hands of the many into the hands of the fortunate few. Circa 2012, Dredge Economies explored this phenomenon and recommended a course of action for curtailing this death spiral.

3. Ted Ngai Director - atelier nGai, Lecturer Rensselaer Polytechnic Institute

Lecture - Architecture of Microbiotic Environments

The lecture will make a case for a non-anthropocentric view of architecture. Outlining the development of what began as an air filtration phytoremediation wall system, which became an investigation of how architecture can be an interface between the various microbiomes in and on our bodies and our constructed environments, the lecture will discuss how we can rethink and tune the living systems that exist in architecture.

4. Francis Bitoni President and Founding Director, Francis Bitonti Studio Inc.

Lecture - Digital Materiality

This lecture will explore the work being done at Francis Bitonti Studio around the use of digital algorithms for the cultivation of unique material properties and forms. We will further discuss the implications these Digital materials will have on supply chains and global manufacturing.

*Guest speakers and also dates may change due to availability