

# AVEI NEWSLETTER



*Satprem testing a CSEB in Sri Lanka produced by an old Balram press*

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The crunch has been on at the Earth Institute in the months before the North East Monsoon sets in.

Construction continues on the Sharanam site and small-scale vaulting experimentation has been led by Ayyappan at the Earth Institute to explore the potential for Catalan vaulting with CSEB.

Satprem and Lara traveled to Sri Lanka to assess the viability of CSEB production and house construction for displaced residents in the Eastern and Northern areas of Sri Lanka. A few introductory images are included in this newsletter and a more complete write up will feature in an upcoming newsletter as the scope of this project becomes more clear.

Please feel free to share this newsletter with your friends and colleagues as we spread the knowledge of earth architecture to the world!

Earthily yours,  
The AVEI Team



Satprem demonstrating sensitive soil analysis



Visit to a quarry with poor land management practices

### Sri Lanka CSEB Feasibility Study

Lara and Satprem traveled to Sri Lanka in August for an initial feasibility study of the potential for using CSEB and other earth-based building materials in the reconstruction efforts in the Eastern and Northern provinces of Sri Lanka. Habitat for Humanity Sri Lanka (HfHSL) has teamed up with World Vision Lanka at the behest of the Delegation of the European Union to Sri Lanka & the Maldives in order to promote owner-driven reconstruction of houses and sustainable local livelihoods.

During the two-week visit, Satprem and Lara met with local stakeholders and officials, visited quarry sites, trained HfHSL staff in the techniques of soil collection and analysis, assessed the results of previous attempts to implement CSEB construction, and inspected existing industries of construction materials.

Their findings were published in a report to guide the implementation of the project. It remains to be seen in discussion with HfHSL what will be the next steps of the project, however, it is with great hope that this project may serve the needs of internally displaced persons in the north

and east of Sri Lanka.

[www.hfhsl.org](http://www.hfhsl.org)

[www.wvi.org/srilanka](http://www.wvi.org/srilanka)

[eeas.europa.eu/delegations/sri-lanka\\_en](http://eeas.europa.eu/delegations/sri-lanka_en)



Lara speaking to a group of local stakeholders in Batticaloa



**Experimental CSEB Catalan Vault with Clay Mortar**

In August, Ayyappan carried out the construction of an experimental 1.5 x 1.5 m CSEB Catalan vault with a rise of 12.5 cm. Catalan vaulting are a variety of low-rise vaults constructed using layers of thin tiles set with a fast-setting mortar generally composed of high-quality gypsum.

The aim of the experiment was to replace gypsum mortar with a local mortar to lay the tiles with the Catalan technique. Lara, who is a Catalan vaulting expert, conducted initial experiments to lay tiles with the local gypsum and it appeared that the latter was unsuitable. After inquiring about gypsum in India, it became clear that the quality of gypsum required for Catalan vaulting is not available in India. But with technical advice from Lara, Ayyappan aimed to build a Catalan vault using only clay mortar.

Using a square frame and the free-spanning building technique, Ayyappan made two layers of CSEB tiles, each 2.5 cm. thick. A simple clay mortar was sufficient to set the blocks. After the completion of the vault, the Earth Institute team did load testing using sandbags and the vault withstood 300 kg before failure.

The AVEI team will continue experimenting with Catalan vaulting, with improvements to the bond pattern and more stability using a stabilized clay mortar. ■



*Laying the first layer of bricks with the free-spanning technique ; The second layer with rotated bond pattern ; Load testing the vault*

**Hilary's Book Corner**

The Earth Institute library has greatly benefitted from the inclusion of *VerSus: heritage for tomorrow: vernacular knowledge for sustainable architecture*, edited by Mariana Correia, Letizia Dipasquale, and Saverio Mecca. Published in 2014, this book represents the fruit of a joint research effort around the central question, "which are the lessons embedded in vernacular heritage that can contribute to sustainable architecture today?" (pp. 15). Key academic institutions collaborated together—both with faculty and students—to study the existing literature on vernacular architecture, define the parameters of the study, and analyze the collected examples of vernacular building traditions.

The result has been multiple colloquiums to bring the research-

ers together, a well-defined framework for studying vernacular architecture, the identification of numerous sustainable principles derived from vernacular architecture . . . all eloquently described in this almost 300-page, large-format publication.



After beginning with a section of articles defining the project and the scope of the field, the book goes on to detail the different sustainable strategies identified with illustrative case studies taken from examples of vernacular architecture from around the world. An inspiring work which effectively shows rich vernacular heritage that has responded to the environmental, socio-cultural, and socio-economic constraints of the world's diverse regions, it equally demonstrates how they can be adapted to the modern context.

In order to further the dissemination of this research, this and the shorter booklet from the VerSus project are available for free download at:

[www.esg.pt/versus/index.php/publications](http://www.esg.pt/versus/index.php/publications)



*The wheel of sustainable principles defined by the VerSus project (pp. 27)*



## AVEI in the Press

In August, GoUNESCO contributing author Sayana Dutta posted an article about Auroville that prominently featured the Earth Institute and its efforts to promote sustainable architecture. GoUNESCO is a new initiative to encourage young people to engage with cultural heritage through travel, writing, research, etc.

This article comes in the wake of another article about Auroville in the *Architectural Review*, where Satprem was also mentioned as one of the pioneers of Auroville's architectural scene.

[www.gounesco.com/auroville-sustainable-architecture-modern-times/](http://www.gounesco.com/auroville-sustainable-architecture-modern-times/)

[www.architectural-review.com/archive/building-utopia-50-years-of-auroville/10006047.article](http://www.architectural-review.com/archive/building-utopia-50-years-of-auroville/10006047.article) ■

## New Team Members

The Earth Institute has welcomed two new interns from Taiwan!

### *Nien Hsu*

I graduated from architecture design department in Shih Chien University this summer.

I come from Taiwan, which is still a young country in history, existing for approximately one hundred years. So its citizens are not sensitive to the way of "Life" and Taiwanese architecture. I want to remind people about the models that were abandoned by history, find out what materials are suitable for Taiwan, and propose a better way of life.

"What is the architectural relation between human and nature?" is the question that I was always thinking about during my college period. I believe material plays an important role in it. Materials are born in nature, get from nature and finally decay back to nature. It obviously represents the concept of - "Cradle to Cradle". I am also curious about how to adjust material and design to lots of different factors. For example: climates, cultures, environment, and habits.

I want to dedicate myself to the relation between human habitat and natural environment so that they are compatible with each other rather than against each other, which are both part of this universe.

### *Ying Ying Cheng*

"Well, in my world, this is a rubber duck. It comes in California with a warning - 'This product contains chemicals known by the State of California to cause cancer and birth defects or other reproductive harm.' This is a bird. What kind

of culture would produce a product of this kind and then label it and sell it to children? I think we have a design problem."

This is the preamble of William McDonough's TED speech. It really gives me a big hit because I believe this problem has already existed for some time but I hadn't seen anyone ask this out in the open. What kind of culture would create products like this? And the next question is: What kind of future will be the result of this culture?

I have grown up in a fertile generation: 24hrs convenient store, clean water, bountiful food, and mature technique. After waiting for a second, then one comes up with another question: Is it worth it to pay so high a price and get these overdose products or make things as they should be by right?

I think I need to escape from this culture temporarily. Auroville accepts embarrassed runaways like me. It's an international township with respect for nature and humanity, including so many evolved systems like compressed earth-building techniques, rain-water harvesting, plant-based sewage treatment, solar and wind energy. So many fantastic things to learn and I do enjoy the life style in here. How I hope to get back to this ideal state. And maybe, just maybe, bring some beauty back to my own country, Taiwan. ■

**Recent Training Courses**

During the months of August and September, the Earth Institute hosted six weeks of training courses. In August, CSEB and AVD Intensive courses were held during consecutive weeks. CSEB Intensive attracted 37 trainees and AVD Intensive brought together 16 trainees. Students came from all around India, as well as from Iran, Nepal, Germany, USA, Qatar, and Bangladesh.

In September, the month was filled with CSEB Production & Masonry, followed by AVD Theory & Masonry. The CSEB courses had 21 trainees and the AVD courses had a smaller grouping of 13 trainees. Students came from India, Turkey, Mozambique, Bangladesh, France, the UK, and Germany.

October will be a quiet month before training courses will restart with the new two-week **Bioclimatic Earth course** from 31 October to 12 November. ■

**AVEI Training Course Schedule for 2016-17**

2016

November

31/10 to 12th: Bioclimatic Earth

December

5th to 10th: CSEB Intensive

12th to 17th: AVD Theory

19th to 24th: AVD Masonry

2017

February

6th to 11th: CSEB Design

13th to 18th: CSEB Intensive

20th to 25th: AVD Intensive

April

27/3 to 1st: CSEB Production

3rd to 8th: CSEB Masonry

June

5th to 10th: Ferrocement

12th to 17th: AVD Theory

19th to 24th: AVD Masonry

July

10th to 15th: CSEB Design

17th to 22nd: CSEB Intensive

September

28/8 to 2nd: CSEB Production

4th to 9th: CSEB Masonry

11th to 16th: AVD Theory

18th to 23rd: AVD Masonry

November

6th to 18th: Bioclimatic Earth

December

4th to 9th: CSEB Intensive

11th to 16th: AVD Intensive

Congratulations to Training Course Coordinator Saravanan and his wife Nithiya on the birth of their daughter, Advika!

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