

AVEI NEWSLETTER



Bioclimatic Earth

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We have had a succession of satisfying achievements at the Earth Institute, with the completion of the single and double story units at Sharanam and the construction of the demonstration house for the “Homes not Houses” program in Sri Lanka. Not to mention recognition by the Curry Stone Foundation as honorees of their Social Design Circle for the month of October!

Teaching has also been at the forefront, with four weeks of training courses, Isis beginning to give more Elementerre and sensibilization demonstrations to village action and school groups, and the kickoff of a new community lecture series on architectural experience by Omar.

Now with a fresh coat of paint and new window panes, the Earth Institute will start preparing with hopeful expectation for a more plentiful North-East Monsoon this year.

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

Sharanam Single and Double Story Units Completed!

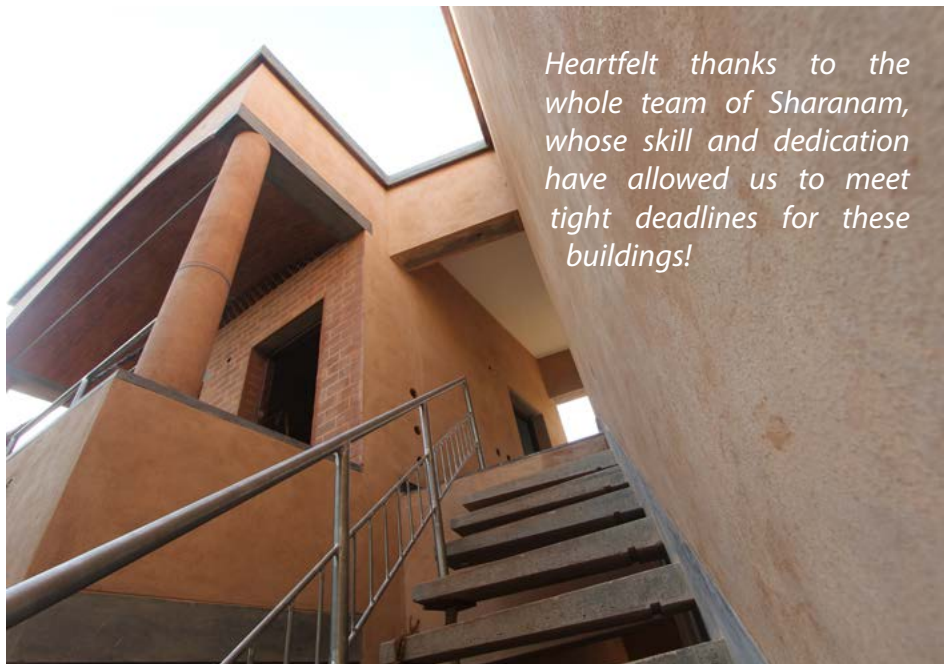
We are pleased to report on the completion of the single and double story units of Phase II of Sharanam, a rural development and skill training centre of the Sri Aurobindo Society. The completed Phase II work, designed by Lara and Satprem, is comprised largely of residential buildings which will enable the centre to begin operation. Four single story dormitories are laid out along the masterplan axis – a poured earth concrete road linking the Phase I main hall with the Phase II program. These dormitory buildings face the street with *thinnaish*, a traditional Tamil social space, which is covered with vaulted masonry. Each of the staggered, vaulted rooms accommodates 4 beds, with a large connecting bathroom designed for residents' comfort. The rooftops provide spacious terraces connected by elevated walkways.

Four double story residential units – built in a similar architectural language – are spread out along the northeastern site boundary, and connected by a path under the tree canopy. Each floor includes two double-occupancy suites with adjoining *thinnaish* or balconies, separated by an open-air *loggia* with private bathrooms. These buildings have been constructed – from plinth to

vaulting – with CSEB, poured earth concrete foundations, ferrocement structural elements, lime stabilized earth plaster, woodwork with recycled local hardwood *kalimarudu*, and stone flooring. Terracotta *jaali* walls have been used for spandrel walls under the vault and bathroom panels to passively ventilate and illuminate the spaces while maintaining privacy. ■



Single story units flanking the PEC road, with interconnected roof terraces



Heartfelt thanks to the whole team of Sharanam, whose skill and dedication have allowed us to meet tight deadlines for these buildings!

Views of the double story residential units, with CSEB walls and vaulting, jaali ventilation, lime plaster, and stone flooring

AVEI Joins the Social Design Circle!

We are proud to be recognized as a 2017 Social Design Circle Honoree by the Curry Stone Design Prize. Every year, the Curry Stone Foundation honors individuals and organizations who have employed design to promote social justice, through architecture, graphic design, product design or other forms of design work.

This year, to mark their 10th anniversary, the foundation has decided to distinguish 100 practitioners from all over the world, with a monthly roll out of the honorees and a page devoted to the activities of each.

You can find the news at: <http://currystonedesignprize.com>

<http://currystonedesignprize.com/honorees/auroville-earth-institute/>

Please help us share this wonderful news and bring visibility to the other practitioners honored in the Social Design Circle! ■



CAN A CITY WORK AS AN ECOSYSTEM?



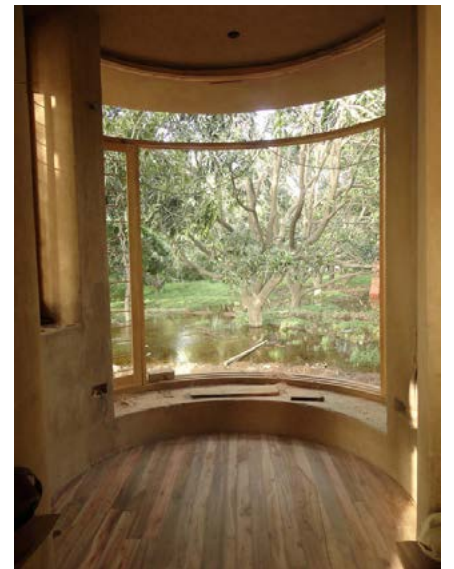
[f](#) [t](#) [v](#) **AUROVILLE EARTH INSTITUTE**

Visit from Savneet Kaur

Savneet Kaur, principal architect and co-founder of the Haryana based firm Imarat, popped by the Earth Institute for a surprise visit in August.

Savneet's prolific roster of built work includes residential, commercial and community projects, and she is well known on the Indian circuit of architects promoting eco-friendly construction with earth and other natural materials. The work of Imarat stands out in its organicism, rich material sensibilities and its integration into the natural environment.

Savneet has worked collaboratively with architect Didi Contractor, designing and building in earth and bamboo. Along with Didi, she is one among a small circle of women architects who are repopularizing earthen building and sustainable ways of living in India. She is currently engaged in research and development of materials and techniques to develop a regionally specific bioclimatic building model. Savneet is faculty member in earth building at Dharmalaya in Kangra, and is the Director of the MISAAL Training Institute now in development. We will take some time in a future newsletter to write about the activities of this school!



You can see her work at: <http://imaratarchitects.com/> <http://dharmalaya.in/> ■



Ayyappan teaching HfHSL trainees and masons how to build an arch

**“Homes not Houses”:
Training Course on
House Construction**

T. Ayyappan and Satprem conducted a training course in Batticaloa in August for the construction of a model house. This training course was conducted in the framework of the project with Habitat for Humanity Sri Lanka (HfHSL), “Homes not Houses, Building a Sustainable Future Together”, which is funded by the European Union. This project plans to build about 250 CSEB houses in the Batticaloa area.

This program was the second one of the field implementation, as Ayyappan and Satprem already gave a training course in May on the production of Compressed Stabilized Earth Blocks (CSEB) using the Auram equipment. HfHSL did the concept design of the house and the Auroville Earth Institute (AVEI) team prepared all working drawings. As this project is an “Owner Driven” project, the

role of HfHSL’s team is to assist the beneficiaries to build their houses. Therefore, the trainees who attended the course were in fact 8 technical officers from HfHSL and 8 masons, who are to train other masons and help them to build with CSEB and AVEI technologies. The construction of this house was also to explore how much it would cost, how the local masons would learn this technology and if beneficiaries would accept it.

The HfHSL team was in charge of preparing for the course and building the foundations with random rubble masonry, which took them four days before the course. Prefabrication of the ferrocement kitchen counter was the first priority, as it needed to be strong enough to be laid on the 8th course. The prefabrication of composite lintels (RCC in U-shaped CSEB) was the next step, as they had to be cured sufficiently before being laid. →



Trainees laying composite lintels



Living room with view toward the kitchen

The plinth was done with random rubble masonry on top of which was laid the composite plinth beam. All door frames and window frames were laid before the masonry, as this procedure speeds up the work and ensures better linkage between walls and frames. The entire electrical network was concealed within the walls, which is rarely done in that region. However, it was decided in agreement with HfHSL to show the trainees the procedure. However, the future houses will have the electrical network exposed,



Stakeholder and beneficiary family visiting the house

at it took too much time and hence was too costly.

The superstructure of the house was built in 22 days with about 8 masons and a dozen workers. Many beneficiaries (nearly 200 people) visited the house and their overwhelmingly admired

the design, the material and the way it was built. Unfortunately, this prototype house cost more than the budget normally allocated for it. Therefore the next step is to explore how costs could be reduced. We would like to thank very much the entire team of HfHSL for their hard work! ■

Upcoming Conferences

We want to bring to your attention two important events for the earth-building community – particularly in South and South-east Asia – that are coming up in the next year.

EBAA Conference

The Earth Building Association of Australia (EBAA) is hosting an international conference from 2 to 6 November 2017. This inaugural conference will be held in Albury, Australia and will include hands-on workshops,

presentations from international experts, and a tour of local examples of earthen architecture. Their website includes more details about slated speakers, scheduled events, and registration fees:

www.ebaa.asn.au



ISES 2018 Conference

In 2018, the International Symposium on Earthen Structures (ISES) will be coming to India! From 22 to 24 August, earth-building specialists from around the world will be gathering in Bangalore to participate in panel discussions and give lectures.

For more information about participation and the themes of the conference, please see:

<http://cst.iisc.ac.in/ises2018/index.html> ■

Sun & Earth Festival in Ladakh

a narrative report by Isis

Nested in a tributary valley of the Indus River and overlooked by the arid peaks of the Ladakh Range at 3500 m above sea level, the village of Phyang stretches over 15 kilometers and offers, for the traveler arriving for the first time, a surprising and winding landscape: kilometers of sudden life, intense greens and shimmering poplar trees. Here and there, a mix of old earthen houses and modern concrete construction, blending into the shades of grey and beige of the rocky background, ranges slowly up towards the hill where the Phyang Gompa, a monastery dating back from 16th century, stands like a timeless monolith.

The road to the Gompa coils around the hill, and at the junction before leaving the village, a banner indicates "Himalayan Institute of Alternatives, Ladakh (HIAL) welcomes all participants

and experts to the Sun and Earth Festival". This 12-day event, gathering more than 60 participants and 30 experts from all over the world, is the initiative of engineer and founder of HIAL, Sonam Wangchuk, a relentless advocate of sustainability in Ladakh. The festival, co-organized by CRAterre, will unfold in the Photang, a monastery facility used normally to host religious teachings. Surrounded by wide terraced land and bounded by tall poplar hedges, it is an ideal location to host a sustainable construction festival.

This July morning, climbing the parched road to the Photang, there are two other experts from France in the car with me: Virgile, an architect specializing in bioclimatic design, and Caroline, who studied solar architecture in Switzerland. As for me, I'm coming on behalf of the Earth Institute to teach material science with our newly acquired Elementerre toolbox, developed by CRAterre.

But for my first morning, I urgently need to rest, as the altitude

sickness is bound to strike me very soon. The car drops me at the Niajen homestay, a cozy Ladakhi farm run by the Niajen family, where I join the rest of the CRAterre crew. Fortunately, Nathalie Sabatier, ethnologist and workshop instructor, Sylvie Wheeler, plaster expert from France, and Kynia Maruyama, architect and artist from Japan, welcome me with some altitude medication and oxygen canisters. I can restore my energy for the upcoming intense days of workshop.

Participants from all over India, Bhutan, Nepal, Bangladesh, Afghanistan, Iran, Mongolia, Romania, and Algeria gather under the porch of the Photang, a shaded raised platform overlooking the valley, while the festival schedule is distributed. The festival is organized around two intensive periods of classes, hands-on exercises and assignments, separated by two days of field visits: heritage buildings and vernacular structures of the Indus Valley, monasteries and palaces in



Arriving at the site of the Sun and Earth Festival, amid the dramatic beauty of the Ladakhi landscape

Phey and Thicksey, all key to understanding the particularities of the sophisticated architecture of Ladakh.

At the Photang, the day starts early with Japanese stretching exercises led by Kinya, and goes on until 11 pm with outdoor activities. When the sun becomes too harsh to stay outside toward the end of the morning, the group divides into 2 subgroups: 30 participants have signed up for solar architecture classes and the rest go for lectures on earth construction. Experts from Portugal, Spain, France, Japan, India and Nepal have come to give the workshops, which for earth construction include rammed earth, AVD, plasters, soil tests, adobe-making, cob, and of course Elementerre.

The soil we have in greatest quantity comes from a nearby village called Taru. It's yellowish-beige, with a large percentage of silt and little clay. To get a mix more suited for adobe, the most common building technique in the region (a surprise to me who had only seen pictures of rammed earth in Ladakh), the Taru soil is combined with the purple, clay-rich Basgo soil that has also been piled up at the back of the festival site. The third remaining pile of soil strongly resembles Markalak, a clayey white soil from the region traditionally used for plasters and waterproofing, but after several days of testing with Sylvie Wheeler and Ana Vaz Pato, we realize that this soil is too silty to be a form of Markalak. By performing the Carazas test throughout the week, the



Soil samples from Ladakh

participants understand the behavior of these three different soils, with varying water content and compression ratios, and sometimes with added fibers...

Following the two-day break, the Elementerre program intensifies as I'm teaching a group of 6 local volunteers to perform the scientific demonstration in Ladakhi, in preparation for the open days of the festival. I must admit that when the visitors arrive, I'm astounded: with natural confidence, these students welcome the visitors and take them through the demonstration, conveying scientific explanations that provoke speechless smiles from both foreigners and Ladakhis alike. All the while, the construction of the bus stop goes on, with a composite architecture made of cob, adobe and rammed earth, covered with a collectively crafted dome made of poplar wood designed by Kinya. Here again, local people come, experiment, comment,

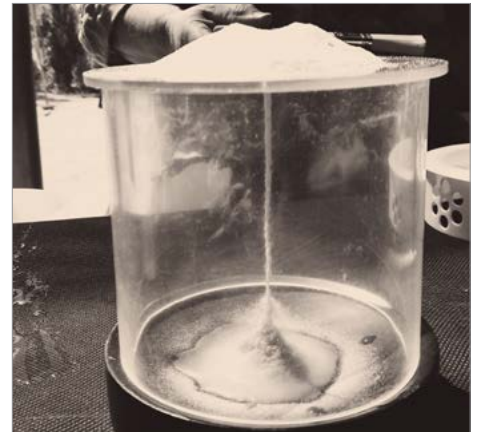


Carazas Test grid, experimenting with different ratios of water and compression

recalling their own memories of vernacular earth building.

As the festival ends with an official ceremony, where political VIPs stand alongside religious leaders, I can feel a vibrant atmosphere full of enthusiasm, where the traditions of yesterday, brought back to life, meet the projects of the future. The local TV is recording the closing speeches: the conclusion of the 12-day festival is both an inauguration ceremony for the HIAL university project and a celebration of building with locally available natural resources like earth and stone combined with energy from the sun. We wish for many more years of the festival and enduring earth and solar traditions, which have surely found an encouraging echo from the local communities and a beautiful campus project in which to thrive!

<http://hial.co.in>



Top: bus stop construction;
Bottom: local volunteers giving the Elementerre demonstration



Hilary's Book Corner

The earthquakes in Mexico and near total destruction of homes and infrastructure in the Caribbean by grade 4 and 5 hurricanes has brought the subject of practical and sustainable rebuilding to the forefront my mind in recent weeks. One publication in our library, *Rebuilding Haiti After the January 2010 Earthquake*, edited by Thierry Joffroy and published in English by CRAterre in 2017, stands out in its detailing of the international efforts to support and reconceive reconstruction efforts after the 2010 Earthquake in Haiti, which catastrophically impacted the lives of 1.5 million people.

Basing their strategy on the premise of “promoting local building cultures to improve the efficiency of housing programmes”, CRAterre and several other international organizations partnered with local NGOs to study the ex-

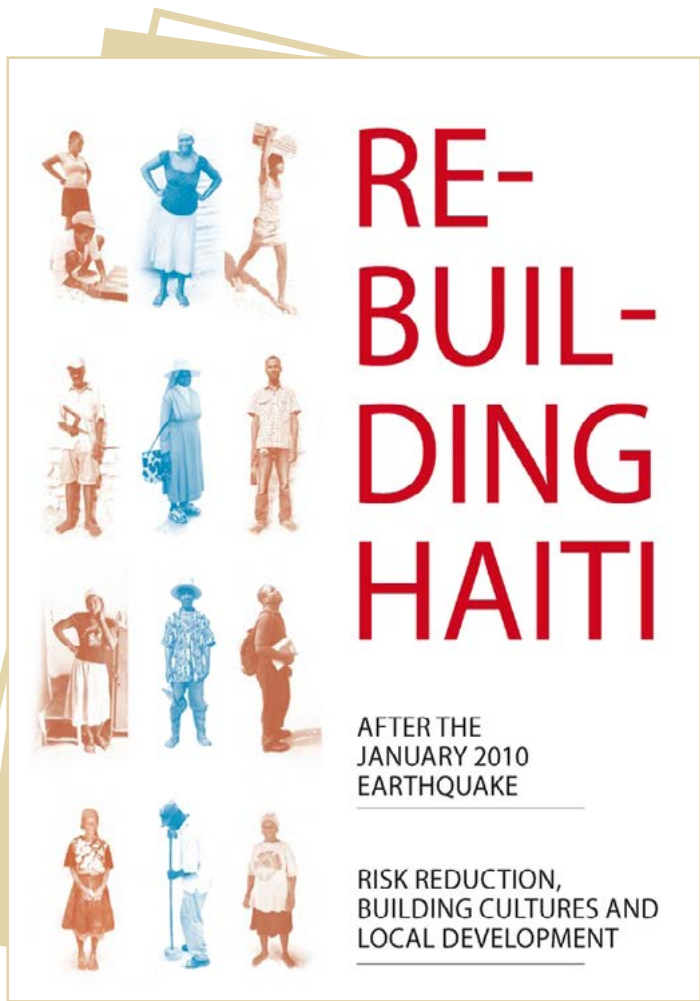
isting vernacular building know-how, environmental needs, and the socio-cultural values.

The projects they introduced encompassed the many different approaches necessary to reconstruct the Haitian community's homes and public buildings, as well as to protect against future calamity. They therefore included in-depth studies of the local building cultures, testing of model structures for durability and disaster resistance, training and certification programs for local craftsmen and construction workers . . . The synergy of these projects led to the rebuilding and recovery of thousands of homes, the creation of low-cost housing options – with the money going

RE-BUILDING HAITI

AFTER THE JANUARY 2010 EARTHQUAKE

RISK REDUCTION, BUILDING CULTURES AND LOCAL DEVELOPMENT



back into the community and creating livelihoods, and an evolution of construction practices in a sustainable way for future buildings and renovations.

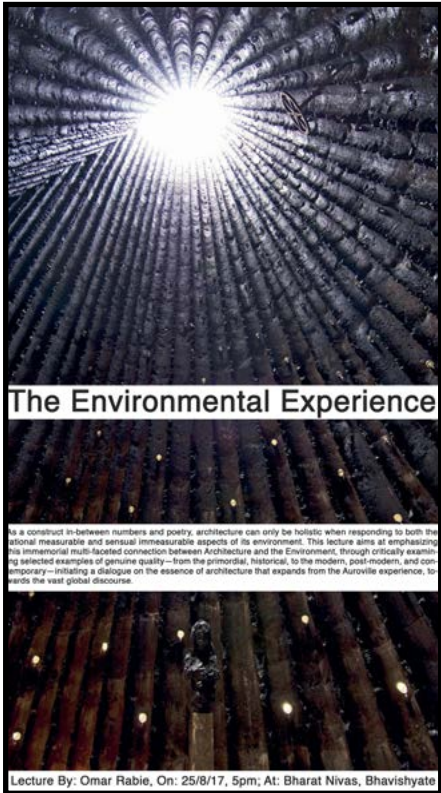
In a simple yet visual manner, this publication outlines the philosophy, methodology, and projects undertaken for the joint reconstruction efforts in Haiti. It details equally the results and observations from the process in order to make this a reproducible model for other post-disaster contexts.

This publication is available for free download:

<https://craterre.hypotheses.org/1701>



“The Environmental Experience” Lecture



At the end of August, Earth Institute lecturer Omar Rabie gave an independent lecture to the Auroville community entitled “The Environmental Experience,” in an effort to look beyond architectural expression in Auroville to give a cohesive narrative over human history. Finding common threads in the work of major academics in the fields of environmental design and history, particularly that of Mark Jarzombek and Victor Olgay, Omar synthesized this research, drawing his own conclusions. With the earliest cases from 40,000 BC, he showed how environment, social structures, and spiritual beliefs sculpted humankind’s interactions with

space and architectural form. Citing beautiful examples of ancient vernacular building cultures, Omar showed a diverse selection of human settlements across the globe and throughout the ages. He concluded his presentation with the year 3000 BC, but intends to continue this study to the present in future lectures.

This lecture has created a platform for further lectures and discussions in this vein in the Auroville community. In a multi-disciplinary approach, there will be documentaries, panel discussions, and lectures planned on the theme of the global human architectural experience. ■

Recent Training Courses

The Earth Institute had an intensive month of training courses from the end of August through September with four weeks of back-to-back training courses. With the full two-week format for CSEB Production and Masonry as well as AVD Theory and Masonry, the campus was alive with students coming from all over India and the world to participate. Seventy-one students in total came through the Earth Institute for these courses, including 4 Nepalis, 3 Americans, 2 French, 2 Jordanians, 1 Indonesian, 1 Saudi, 1 Iranian, 1 Dane and 1 Colombian. A very international group!

Training courses will resume again on 23 October with the Bioclimatic Earth design workshop.

Bioclimatic Earth

DESIGN Workshop
 Earth Institute
 23 Oct-6 Nov
 Omar+Lara+Satprem
 +Project Reviewers
 training@earth-auroville.com

**AVEI Training Course
Schedule for 2017-18**

2017

October

23rd to 6/11: Bioclimatic Earth

December

4th to 9th: CSEB Intensive
11th to 16th: AVD Intensive

2018

January

22nd to 5/02: Bioclimatic Earth

March

12th to 17th: CSEB Design
19th to 24th: CSEB Production
26th to 31st: CSEB Masonry

April

2nd to 7th: AVD Intensive
16th to 30th: Bioclimatic Earth

June

4th to 9th: Ferrocement
11th to 16th: AVD Theory
18th to 23rd: AVD Masonry

July

2nd to 7th: CSEB Design
9th to 14th: CSEB Production
16th to 21st: CSEB Masonry
23rd to 6/08: Bioclimatic Earth

September

3rd to 8th: CSEB Production
10th to 15th: CSEB Masonry
17th to 22nd: AVD Theory
24th to 29th: AVD Masonry

October - November

8th to 13th: Ferrocement
22nd to 4/11: Bioclimatic Earth
12th to 17th: Wind Generator

December

3rd to 8th: CSEB Intensive
10th to 15th: AVD Intensive

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A sneak preview of the Conference Hall currently under construction... vault construction will begin soon!