

AVEI NEWSLETTER



Demonstration of Carazas Test during the Bioclimatic Earth design workshop

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The summer is really heating up in Auroville, but the Sharanam site is winding down and the team has been focusing on drawings and paper writing. AVEI team members will be presenting at several conferences in the coming months, including the annual Symposium of the IASS in Cambridge, MA, the ISES in Bangalore, and LIS in Bangkok.

The Earth Institute has expanded its pedagogical materials in recent months, with new illustrations for the AVD manual, implementation of the Carazas test as part of the Bioclimatic Earth Workshop, and a professionally filmed video of Isis giving the ElemenTerre demonstration.

And we encourage you to take part in our partners' activities, which include a CEB/Adobe workshop in Colorado and the all-new Fibra Award for contemporary architecture made with plant fiber.

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

Wrapping Up Sharanam Site

There is always that moment at the end of a major project when one has the great opportunity to step back and reflect on what has been accomplished. In less than three years, eight dormitories have been built in partnership with the Sri Aurobindo Society, as well as a truly ground-breaking structure, the conference hall with an earthen conical vault of max. 15 meters span (**Newsletter Issue 36**).

As we now finish up the last items - stone flooring, site grading and custom lighting - we must go from a productive mode to a contemplative one. Sharanam has taught us a great deal in this time, and it has allowed us to do something we rarely have the opportunity to do at this scale - to engage in critical regional land remediation and climate resilience through a huge-scale movement of earth, terracing, erosion mitigation and construction. When India and the world wakes up to the potential that earth building craftsmen can play in climate mitigation...

We would like to express our deep gratitude to the Sri Aurobindo Society (Vijaybhai Poddar, Gita Patel, Dr. Ajit Sabnis, Kaushal Sharma and especially Chandranath Sinha), project donor Shri Shri Rahul Bajaj and Auto Bajaj Limited, Mahesh Varma of Nandadeep, Palani and



Completed earthen conical vault of the Sharanam Conference Hall

steelwork team from Aureka, Ricardo and team from New Dawn Carpentry, Peter and team from PUnity Carpentry, Madan and stonemasonry team from Barsha Marble & Granite, Shaktivel and electricians, Tency Baetens, Gilles Boulicot and team from the Centre for Scientific Research, Kumbha from Soundwizard, Elodie and Txuma from Glimpse, all of the masons and crew, and the entire team of the Earth Institute that participated in the

design and construction. Our thanks also go to architects from Sharanam Phase I, Jateen Lad and Trupti Doshi, for involving us as a technical partner in the Phase I campus and for encouraging us to take on the completion of the campus in Phase II. We wish truly that the Sharanam Rural Development Centre can now transition into an active campus which facilitates the excellent social and educational work of the Sri Aurobindo Society! ■



Video of ElemenTerre Demonstration

In March, Isis teamed up with the Auroville Radio-TV team to film the entire ElemenTerre demonstration. ElemenTerre gives a lively introduction to the physical properties of the material earth, principles of building technologies and a sensibility for sustainable construction. Isis travelled to France to be trained by our partners at CRAterre to use the ElemenTerre kit, and she has

been offering dynamic demonstrations during AVEI training courses, and awareness courses for schools and womens' groups.

Isis is now returning to France to pursue further work there, and this high-quality video of the demonstration will help widen the reach of the program, creating a permanent record of the demonstration in English. Isis has already trained the new ElemenTerre presenter, Meenakshi, who will start full time at the Earth Institute in July.

Thank you to AV Radio-TV for this beautiful film and to Serge Desjarlais for his generous help in the coordination for the video. Best of luck to Isis in Alsace!



Isis in action demonstrating the properties of granular material in the AV Radio-TV produced film

Earth Block Goa

At the end of April, a team from Aureka and Earth Institute traveled to Sanquillim, Goa to assist with the installation and setup of a recently purchased Auram 4000, Auramix 5000, and Auram Crusher. This set of block-making machinery has been acquired by Earth Block Goa, a joint venture led by Mr. Ajay Gramopadhye and Dr. Pramod Sawant. The ribbon cutting ceremony for this new blockyard took place on 26 April.

This part of inland Goa has a long history of iron ore mining, and Earth Block Goa proposes to use the mining waste – a gravelly-clayey soil – to make CSEB for construction purposes in the region. The Earth Institute plans to continue collaborating to further train the team and provide technical guidance.

Goa already has a rich history of earthen construction. Its lateritic soils, which harden to a stone-like consistency through a process called induration (see **Newsletter Issue 34** for a full description of laterite construction), have been extensively used for construction in Goa, as evidenced by its magnificent heritage buildings constructed primarily with laterite. This CSEB blockyard can offer a new form for earthen construction in the region, and a model for other mining regions. ■

Examples of laterite architecture at the Basilica of Bom Jesus in Old Goa



Set up and pooja of the new Auram block-making machinery for Earth Block Goa in Sanquillim



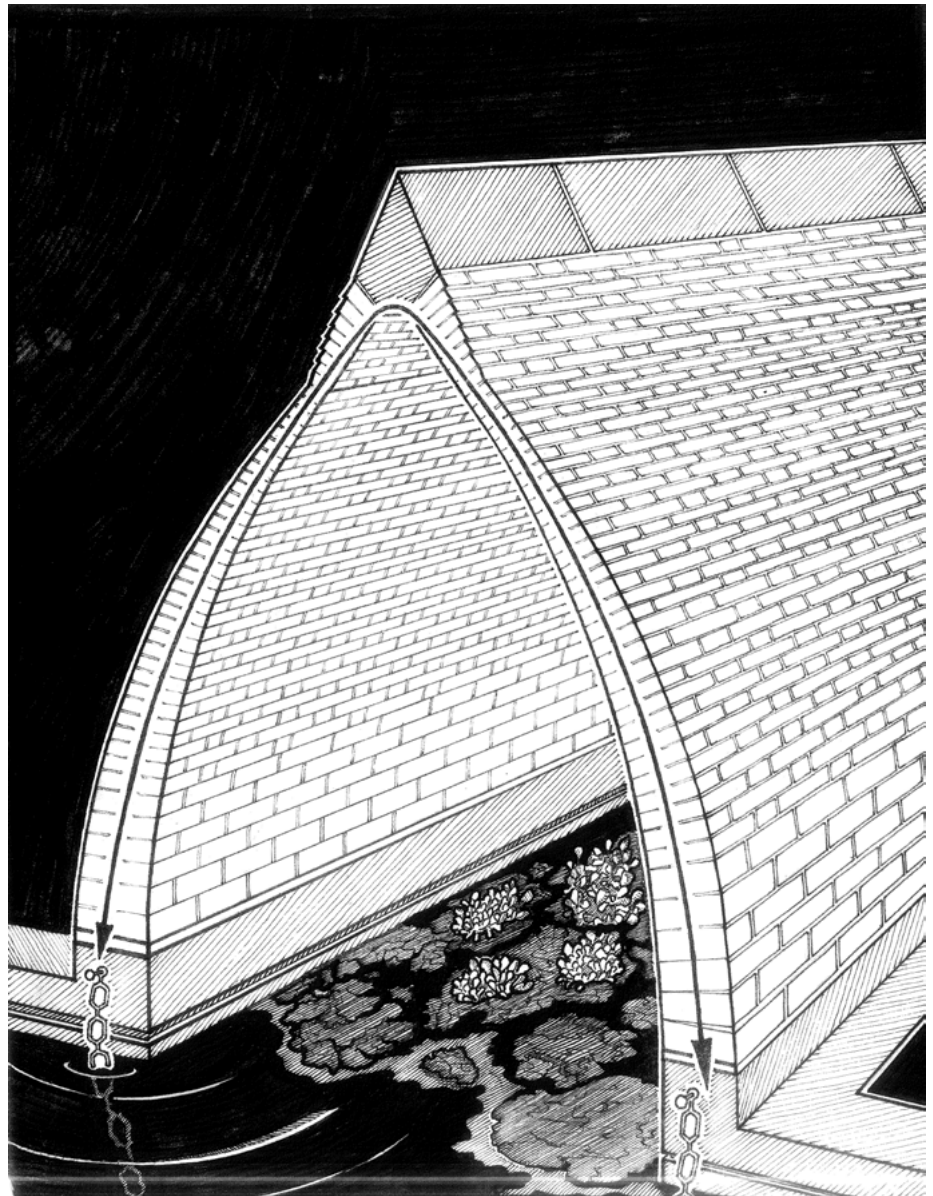
**Shobhit's Drawings
for the AVD Manual**

By Shobhit Kenath

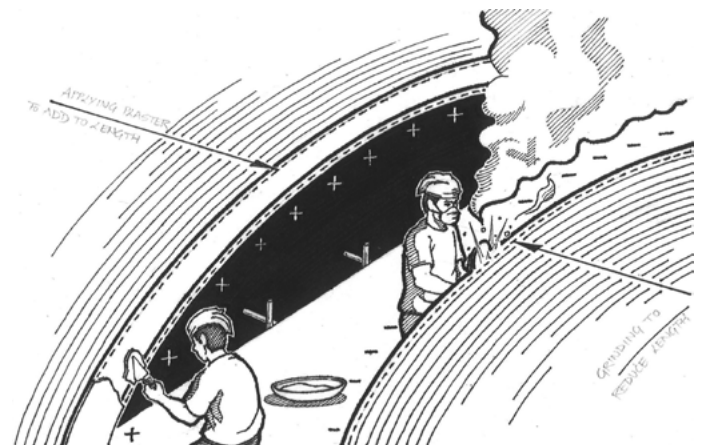
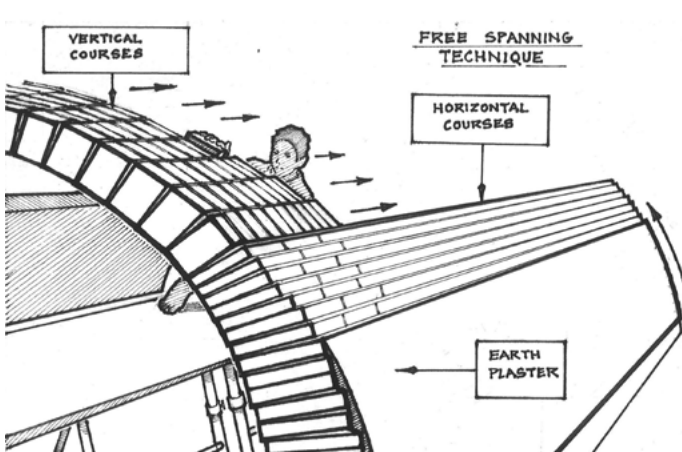
The AVEI team recently decided to improve the illustrations for its training manual, *Building with Arches, Vaults, and Domes: training manual for architects and engineers*. I was given the responsibility of making this manual more visually communicative by redrawing certain sections of the diagrams and photographs.

The current training manual for the AVD course houses a tremendous encyclopedia of technical information. My attempt is to better convey that information to an amateur builder/mason/architect or even a layman by reworking key drawings and improving visual clarity. "A picture speaks a thousand words," this is the basic essence of the work I have been attempting to produce.

My aim is to create sketches and illustrations that are expressive and engaging, and convey as much information as possible to

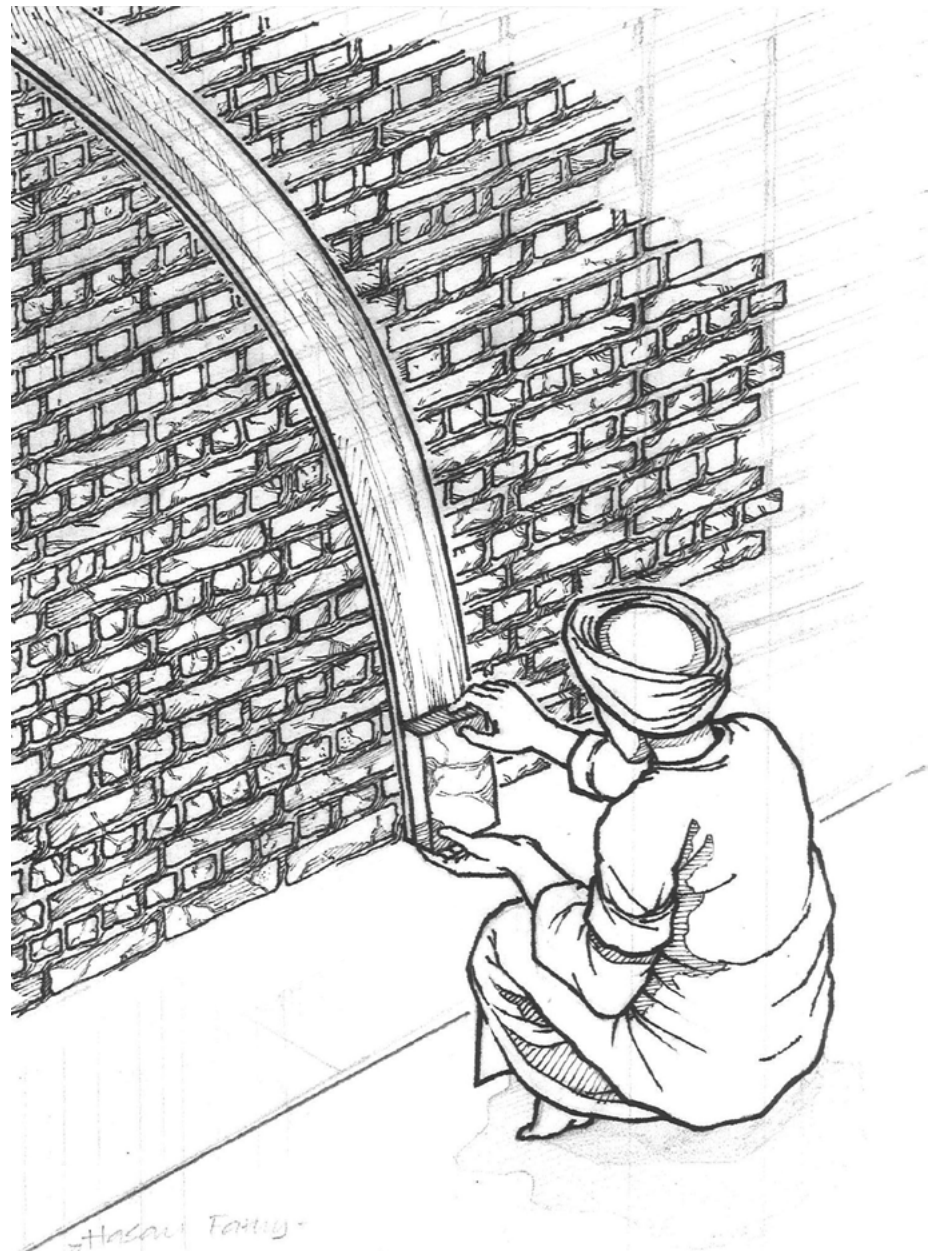
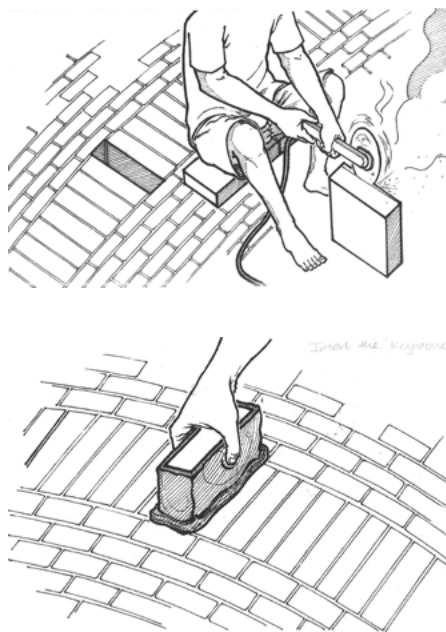


A selection of Shobhit's drawings

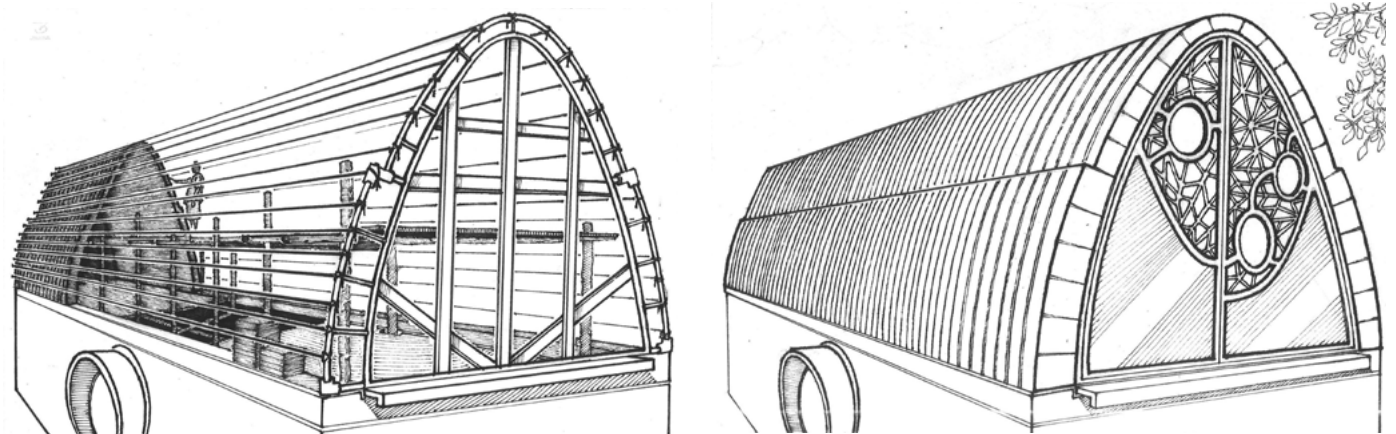


the reader. Naturally, legibility and clarity are of the utmost importance. Hence, all the illustrations have been hand-drawn in a style that is very diagrammatic and technical, but also having an artistic element.

The major portions that have been covered so far deal with the basic principles for achieving stability in arches, vaults, and domes, and also the different stages in vault construction, showing in detail the different processes. ■



A selection of Shobhit's drawings showing the AVEI Free-spanning and Nubian vaulting techniques



Addition of the Carazas Test

During last month's Bioclimatic Earth workshop, we started demonstrating the 'Carazas Test' for the first time. Invented by close colleague Wilfredo Carazas, the Carazas test looks at the relationship between the hydric states of soil (e.g. dry, humid, plastic, viscous, liquid) and variation in compaction (e.g. compacted, tamped, filled) which corresponds to different earth construction techniques (e.g. rammed earth, cob, adobe).

This very effective pedagogical tool shows which soils are ideally suited for specific techniques. For 'Bioclimatic Earth', this test is being used to demonstrate best practice in context-responsive design, imparting an understanding of the nature and behavior of soil, an overview of earth construction techniques, as well as corresponding mix components and densities. This aims to develop a strategic understanding of thermal properties for adaptive climatic design. ■



Lara and Isis demonstrating the Carazas test during the Bioclimatic Earth design workshop



Introducing the Fibra Award

Submissions have opened for the all-new Fibra Award, an international prize aimed at promoting contemporary architecture built with fibers, whether bamboo, reeds, straw, or other plant fibers. Initiated by Dominique Gauzin-Müller, Laetitia Fontaine, Guillaume Habert, and Bernard Boyeux, this award parallels the Terra Award that recognizes contemporary earthen construction.

Architects can submit their buildings up until 15 September 2018. We encourage everyone to visit their website to learn more:

<http://www.fibra-award.org> ■

Sri Lankan CSEB Feasibility Study Books Available

The Earth Institute has just received copies of the *Feasibility report for compressed stabilised earth block (CSEB) production and use in the north and east of Sri Lanka*, published by the European Union. This book, written by Lara and Satprem, is an in-depth study of the potential for CSEB and earth concrete block as construction techniques for the “Homes not Houses” project and Sri Lanka’s reconstruction efforts in general.

A limited number of copies are available at the Earth Institute. It can also be obtained through the EU publications website:

<https://publications.europa.eu/en/publication-detail/-/publication/184b5e07-1851-11e8-ac73-01aa75ed71a1/language-en> ■



New Team Member

The Earth Institute has welcomed one new team member!

Joseph

After working in hotels in France I decided to train as a Tourism Establishment Manager. I remember my first day of class when I introduced myself and said I wanted to create a camping site with earthen cottages and that after this course, I would go to Auroville in India to learn about earthen construction techniques...

Now I am finally here, rich with one year study on how to manage a camping site, and now looking forward to learn how to build one like no other. ■

Upcoming BABS Workshop in Colorado

Colorado Earth has announced an upcoming training course in Golden, Colorado, Building a Brick Shithouse (BABS) Workshop from 11 to 17 June! In the course of this 7-day hands-on program, participants will build a CEB structure, compost toilet, CEB barrel vault roof, and apply earthen plaster to the CEB walls.

Colorado Earth was started by Jim Hallock and Lisa Schroder, renowned experts in CEB and Adobe respectively. They have conducted dozens of workshops on earthen construction in the US, Mexico, Africa, Central and South America, New Zealand, and Haiti, and led numerous small and large-scale construction projects around the world. ➔

See their website for further information about this workshop and their other activities:

<http://www.coloradoearth.com> ■

Recent Training Courses

The Earth Institute gave two training courses in April, the AVD Intensive course at the beginning of the month, followed by the two-week Bioclimatic Earth Workshop. Twenty eight students attended the AVD workshop, coming from all over India, as well as Nepal, Singapore, and the US. It was a particularly impressive group, with one young trainee, Ruut, still in high school, but intending to go on to study architecture in



Build a Brick Shithouse "BABS" Workshop in Golden, Colorado June 11-17, 2018

This is a one-of-a-kind 7-day workshop, and sure to be a lot of fun! We will cover a variety of topics including CEB making and laying, barrel vault construction, compost toilet installations, and earthen plaster. You won't want to miss this one!

the US. In May, the Earth Institute also welcomed trainees for two days as part of the Earth & Bamboo workshop, organized by AV Green Practices and co-taught by the Auroville Bamboo Centre and Earth Institute. Training courses will resume in June with the Ferrocement workshop, followed by AVD and CSEB workshops. ■

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

NEW DATES!
 October
 8th to 13th: Ferrocement
8th to 22nd: Bioclimatic Earth

November
 12th to 17th: Wind Generator

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

AVEI Training Course Schedule for 2018

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

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