



# AVEI Newsletter - Issue 51

*With a few farewells and some hellos, AVEI has sailed through 6 eventful months and we are here to tell you all about it.*

*As we explored and implemented different innovations in our projects, we continued our trainings both online and on the field.*

*The AVEI social handles have garnered followers and appreciation. If you feel a 6 month wait is too long to hear from us, follow us on Instagram to get our day-to-day updates.*

*We wouldn't keep you waiting long on the cover but please do feel free to share this newsletter with your friends and colleagues and help them become a part of the AVEI family.*

*Earthily yours,  
The AVEI Team*



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### Imagination to Realisation: The Bonnet Residence

As the days fly by, the spaces visualised for Bonnet Residence are eventually turning into a reality.

Since January, where we had completed the construction till the lintel level, we have fast progressed to the roof level along with the finishing of the vaults and dome. The cloister dome, resting on its square base, marks the reception room of the family, and has one of the biggest spans than what we have previously attempted. Along with it, we are implementing a triangular cloister dome, which marks another one of our new and unique endeavour.

### Osodhara 33m Dome in Gujarat: Redefining Conventions

After extensive research by Satprem and redefining the composition for the foundations with Poured Earth Concrete mix to preserve the sustainability quotient of the project, the client finally preferred to use conventional plain cement concrete. The foundations of 6350 m<sup>3</sup> are almost completed. The project is slowly advancing and we look forward to report more on it in the next newsletter.





### Malavika in Feminarch

Our Communication and Website Specialist, Malavika, was one of the speakers at the Feminarch'23 Conference, conducted by the Gender Cell of the Indian Institute of Architects, Kerala Chapter.

The conference aimed to shed light on the challenges faced by women and other minority genders and sexual orientations in the profession of architecture and attempted to raise awareness and begin conversations on the way forward.

Malavika shared a presentation on 'Navigating the challenges towards a gender-inclusive community' in collaboration with Ar. Ajai Paul which highlighted the gaps that need to be addressed in the architecture community and beyond for the LGBTQ+ Community for building a community inclusive of all sexual orientations and genders.

Malavika was also the panelist for the 1st session and shared the stage and her thoughts among eminent architects of the field like Ar. Madhavi Desai, Ar. Lalichan Zacharias, Ar. L. Gopakumar and many more. She engaged in a riveting discussion with the panelists and the audience which inspired a changed perspective in many.

We congratulate her and wish her many more opportunities of creating meaningful changes in society.





Bap 2022 Cover: Visible Invisible  
Source: BAP website

AVEI was featured in the second exhibition and issue of Biennale d'architecture et de paysage-Bap! - Visible Invisible, which continues its reflections on the theme "Land and Cities". Attention was focussed on the unrelenting and rigorous research of Satprem Maini to revive and adapt the traditional techniques of building with earth. With a prelude to the history and



CSEB blocks featured in the exhibition  
Source: Instagram @ nicolas\_db

### AVEI's Technology exhibited in France

genesis of Auroville Earth Institute, the article goes on to focus on CSEB, interlocking blocks for seismic resistance along with the study, development and construction of self-supporting CSEB domes and vaults built without formwork. 'Visible, Invisible' focuses on the pertinent question of preservation of ecosystems within urban areas clashing with ever increasing demand for housing, and focusses on exploring new paradigms which can concile urban aspirations with land preservation.



Source: ACE Magazine instagram



### AVEI's senior architect, Ar. Radhika Soni, featured in ACE Update

The ACE Update Magazine featured our senior architect, Ar. Radhika Soni in their March 2023 issue which was a part of their Women's Special Edition.

This edition highlighted the work of various women in the field of architecture, construction and engineering who have redefined the field through their ingenuity and innovations. As our senior architect, Radhika leads the architecture team and actively engages in our technological transfer projects. In addition to this, she is a faculty member for our training courses, educating architects and engineers from the Habitat of Humanity, Sri Lanka and the Aga Khan Agency for Habitat, Syria, as a part of the AVEI technology transfers. The article highlights AVEI's work and Radhika's role as a core pillar of our team, translating our mission to a reality.



## Decoding Good Practices In CSEB Production



CSEB Blockyard in Auroville

Hence, stabilization is required and it's strongly related to its compressive strength. Typically cement in a proportion of 3-7.5% of the dry soil weight is used, based on soil tests. If the content of cement exceeds 7.5%, it might not be the most sustainable choice.

A good idea for anyone sourcing CSEB

from a block-yard would be to ask for various test results such as the Compression Strength tests. The wet and dry compressive strength of CSEB should be at least 3MPa and 6MPa respectively. Another one would be the Compression Test with penetrometer.

Application of maximum pressure by the penetrometer shouldn't cause a depression of more than 6mm. Deeper depressions indicate the mix being either too wet or the poor compression of the blocks, resulting in reduced shear strength.

The dimensions of a CSEB block are significant. The first block of every mix must be

CSEB has gained recognition as an eco-friendly and sustainable construction alternative. But a recent visit to some CSEB blockyards revealed extremely negligent practices, like bypassing the curing process even though the blocks need to be cured thrice a day for 28 days.

Such dereliction of standards has become a serious cause for concern and can jeopardize the trust that CSEB as a material garners with the public.

As an effort to curb such malpractices, AVEI has released a short checklist of good practices for CSEB Production, which can also be found on our **Instagram handle**.

A major challenge of using earth as a building material is, depending on its type, soil might lack dimensional stability and durability required for building construction.



A penetrometer:  
a device used for quality testing of CSEB



A penetrometer being used



*Auram press 3000- used to produce CSEB Blockl*



*Dimensions of CSEB block being checked for quality control*



necessarily checked for overall uniformity of the dimensions and angles. Discrepancies might indicate inferior quality of the mix. Dry mixes give thicker blocks while mixes with more moisture content yield thinner blocks. The edges and corners shouldn't chip off. If they do, it could indicate lack of homogeneity in the mixture, uneven filling, or the use of old worn out moulds. Curing status of the blocks must be checked upon regularly. Humid curing is primarily done, followed by a curing time of 28 days, ensuring proper settlement of the cement and soil to form a homogeneous mixture. Each pile of the blocks stored, should have the dates chalked down on their sides to keep track of the number of days a pile has been cured. Failing to properly follow the curing process, results in production of blocks that erode and eventually crack. Following and respecting these norms and standards ensure production of blocks of good quality, strength and endurance, helping us to unlock the true potential of CSEB as a sustainable and viable construction material.

### **Sustainability: Absolute or Contextual ?**



*Building with CSEB*

During our Alumni meet, a very interesting topic arose. Few of them, who are currently practising in Bangalore, pointed out that CSEB is often not the most sustainable choice of building material for them, due to the challenges that arise for the lack of space in cities to use the machinery and the insufficient availability of viable soil on site for CSEB production. To still use CSEB in these projects, one would have to source and transport soil from further away, thus largely affecting its embodied energy and sustainability quotient. This was an important reminder that it is always the context that defines whether or not the material we use is sustainable and we need to consciously choose the most appropriate choice based on the environmental, economical and social context. Just using CSEB doesn't automatically mean that the project is sustainable. Was it truly the most sustainable choice for your project? Just some food for thought.



### The GLZ- event

In the month of February, GLZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) hosted a 2-day event in Auroville with key stakeholders from 4 cities- Surat, Pune, Nagpur and Bhubaneswar along with the Ministry of Environment, Forest and Climate Change (MoEFCC) and Central Pollution Control Board (CPCB) as a part of the German Development Corporation project on "Reduction of Air Pollution in Three Indian Cities."



Our communication and website specialist Malavika, hosted the delegates for a campus tour of the Earth Institute as a living example of sustainable building technology and solutions to facilitate experience sharing and envisioning implementation of key strategies. She introduced AVEI's activities, research and knowledge and our impact in developing and disseminating energy efficient and disaster-resistant construction technologies. AVEI is very thankful to Auroville Green Practices and Auroville Consulting who were responsible for the smooth co-ordination of the event. We were very delighted to know that the delegates found their visit inspiring and informative.

We sincerely hope that this supports their mission of developing sustainable solutions in their cities and look forward to collaboration with all the participants and organisers.

### Benoit Lamber Visit

The President of La Nubien Vaute, Benoit Lamber visited AVEI. One of our alumni, Samuel Rodrigues, works with them. La Nubien Vaute is an association which aims to resolve housing problems in the African region by reviving the ancestral technique of building Nubien Vaults. Built essentially with the abundantly available adobe bricks and mortar, it cuts down the need for using timber and importing metal sheet roofing and provides a more sustainable, affordable as well as contextual alternative for houses. AVN investigates this technique with the aim of simplifying it so that local masons can easily learn it, resulting in better housing solution, while removing the difficulties that buying expensive metal roofing sheets pose, improving people's living conditions.

Our co-director Ayyappan and senior architect, Ar. Radhika gave them a guided tour and introduced them to our work and research with Earth architecture.





## Meeting of Earthy Minds

On a fine weekend in May, a few alumni of AVEI organised and joined us for a weekend to celebrate Satprem's birthday. Ar. Adwaith, Ar. Manjunath, Ar. Ram, Ar. Rosie & Ar. Sridevi from Masons Ink & Ar. Vinu Daniel of Wall-makers along with their families joined us. All of their journey into Earthen Architecture had commenced here. In AVEI and some go back as far as 25 years. The weekend began with merriments on the occasion of Satprem's birthday and everyone reminiscing and telling an array of stories of their experience with AVEI and their time in Auroville. They shared how Satprem, Ayyappan and AVEI has inspired them, not just in profession, but also influenced them to imbibe conscientious values on a personal level. The alumni also presented their journey with Earthen Architecture being moulded to suit different contexts and it was a delight to see a glimpse of their amazing journey through the years.





## On-Campus , Online courses & Awareness programmes



CSEB Intensive training course

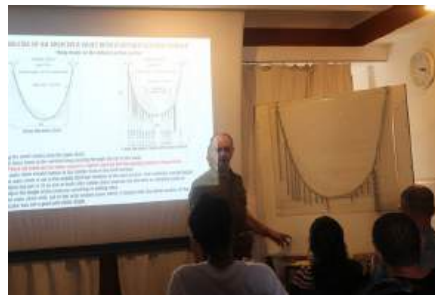
Along with the usual technology transfers and Consultancy projects, AVEI also engaged in training courses to provide hands on experience in techniques used for Earthen constructions. Seven on campus training courses were conducted which included courses on Ferrocement, CSEB Design and courses on AVD. Our online course of CSEB theory garnered participation. Completion certificate was awarded to a student from India.

The CSEB Intensive garnered maximum participation of 32 students, closely followed by AVD Masonry which was opted for by 30 students.

Overall 14,212 students from 93 different countries were trained and classes were held in 23 different countries. As part of the awareness programmes, 55 people visited and were taken on a campus tour by our junior architect Kishore.



Students in AVD Masonry, CSEB Design & CSEB Intensive respectively



Students in Ferrocement & AVD Intensive Course

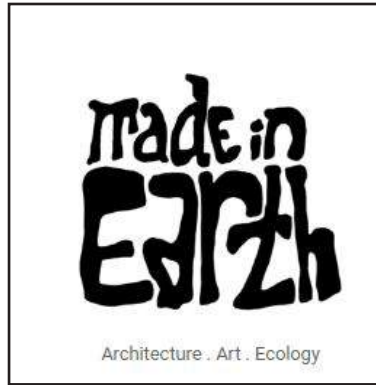


55 people visited AVEI as part of an Awareness Programme



Photography: Made In Earth Collective

Shruthi Ramakrishna, Jérémie Gaudin, Agnimitra Bachi  
Made In Earth Collective | Architecture, Art & Ecology  
Partners  
India



Source: 1) INDE Awards Website  
2) MIE website

## Congratulating our Colleagues sculpting a legacy in Earthen Architecture

AVEI congratulates Ar. Shruthi Ramakrishna, Ar. Jérémie Gaudin and, Ar. Shruthi Ramakrishna, and Ar. Agnimitra Bachi, our former students and the founders of Made In Earth and their cofounder Ar. Agnimitra Bachi, for their nomination in the Prodigy category of the 2023 INDE awards.

The Prodigy awards honour those who dare to venture away from the defined course and are intent on breaking the barriers between discipline and design.

They have been recognised and appreciated for their out of the box projects which embody their design philosophy to blend nature, people and the built environment through the mindful use of sustainable building materials, especially clay and lime. Through their creativity and innovation, MIE has been able to showcase the immeasurable potential that stays locked in earth as a building material and we wish them all the best for the upcoming results and their brilliantly bright future.



Source: TED Mediagraph

## Ar. Vinu Daniel in TED2023: Possibilities

Ar. Vinu Daniel, founder of Wallmakers and an alumni of Auroville Earth Institute, was invited to share his original and enterprising ideas of using local waste and discarded material to build surreal, sustainable and climate-responsive structures.

In the era where climate change and impending apocalypse has become the talk of the table, Ted 2023 was all about exploring new possibilities to a better, more sustainable and a more hopeful world. Concluding his talk with a quote of his favourite poet, Ar. Vinu Daniel draws attention to the responsibility we have towards our world and the need to find sustainable alternatives of construction. We congratulate him on achieving this feat and wish the very best for his upcoming years.



## An enriching Office Experience

On 31st May, the entire team went to Dakshinachitra Heritage museum in Muthukadu, Chennai. Ideated by the late Ar. Laurie Baker, Dakshinachitra is a living history museum showcasing 18 authentic traditional houses of different regions of southern India. Filled with different contextual exhibits, the mission of the museum is to promote and raise awareness of the delightfully diverse culture of India, focussing primarily



on South India.

It was an unique trip that combined education and recreation, as we discovered innumerable nuances of life of a forgotten time. To add a hint of thrill to the overall experience, on the way back, we also visited The Madras Crocodile Bank, which is one of the largest reptile zoos focussing on conservation of reptiles and amphibians and their habitats through education, scientific research and captive breeding.





## Team Speaks:

**Raj:** As an architect deeply committed to sustainable practices and environmental responsibility, I firmly believe that sustainability is no longer a choice but an absolute necessity in our lives.

Working in the construction field, I am acutely aware of the significant role it plays in exacerbating the urban heat island effect and contributing to climate change, along with generating a huge amount of waste.

As architects, we bear a tremendous responsibility for our planet and the welfare of future generations. It is incumbent upon us to embrace sustainable and climate-resilient building practices, ensuring a more habitable and sustainable future. Sustainability is not merely an option; it is an inseparable part of our identity as architects and conscientious inhabitants of this planet.

However, sustainability should not be confined solely to the construction field. It must transcend to our daily lifestyles. In my role at the Auroville Earth Institute, I have had the privilege to work with like-minded individuals who share a passion for sustainability and eco-friendly living.

My association with these like-minded individuals has been a source of inspiration and encouragement as we pursue our shared vision for a greener and more harmonious world.

**Shweta:** I am an architecture graduate with a passion for sustainability and an interest in making a positive impact on the environment through conscious and sustainable responses to nature. This interest was sparked when I delved into vernacular architecture while presenting a case study in college.

When we observe the world around us, everything is connected to nature. Nature, with its mysterious existence, coexists with us, and eventually, everything returns to the earth. As humans, we too return to the earth when our finite lives end. So, why not our buildings as well?

I consider myself fortunate enough to work hands-on, so closely with the masons, which has allowed me to understand these techniques better. I hope to use my time here to explore various aspects of building with Earth and help make a difference. Like Earth, AVEI's ideals and teachings grounds me.

## **AVEI on-campus training course schedule for July-September 2023**

### **September**

4th to 9th: CSEB Production  
11th to 16th: CSEB Masonry  
18th to 23rd: AVD Theory  
25th to 30th: AVD Masonry

### **October**

9th to 12th: Ferrocement  
16th to 21st: Wind Generator

### **November**

20th to 25th: CSEB Design  
27th to 2nd (Dec): CSEB Intensive

### **December**

4th to 9th: AVD Intensive

## **AVEI on-line training course schedule for July-September 2023**

### **Second Session**

3rd to 29th July: CSEB Design  
31st Jul to 12th August: CSEB Theory

### **Third Session**

2nd to 28th October: AVD Theory  
30th Oct to 25th Nov: CSEB Design  
27th Nov to 9th Dec: CSEB Theory

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