

In This Issue

- 10 years of successful journey.
- GSBB celebrates WWD
- Deep Ferrotech's resort in WAI
- Visit of OWEN in India
- Ferro-12 news
- Kiran Rajurkar builds water tanks
- Ulhas Adhav saves carpet area
- New Members
- Workshops news
- Greetings of the guests

Important note
Last date of submission of full papers for Ferro-12 is extended to 30 April 2018. Submit your papers through the website only.

10 years Successful journey- Girish Sangle



Ferrocement is a friend of architects and engineers. Ferrocement society is an organisation which is sue Motto doing the work of promoting this technology. An International conference is held every 3 years in different countries of the world on ferrocement. It is very much expected that during the year 2021 next conference Ferro13 will be held in India. Very famous engineer late Mr Vishnu Joshi had started using this technology of ferrocement in India many years ago.

In India this Ferrocement technology is being developed continuously while studying the construction and the research that is taking place world over. Credit of writing the first text book and first handbook on ferrocement technology goes to Dr B N Divekar of Pune Maharashtra.

All was needed was a backing and full support at the government level. Bureau of Indian Standards has already published a standard for constructing ferrocement water tanks upto 10000 Litres. Lining the canals with ferrocement and building small dams abutting the road culverts thereby increasing the ground water table, etc., all such things are done in India.

Very old Constructions were retrofitted and thereby given a strength with the help of this ferrocement technology. Now the engineers working in the construction field particularly with government sector, are also feeling confident about the use of this Technology. (See on Page 3)

An article for everyone

GSBB celebrates World Water Day

On March 22 that was celebrated as World Water Day, the Goa State Biodiversity Board (GSBB)organised a training programme in water conservation. The technique in water conservation through Ferro Cement technology was showcased to the newly constituted and reconstituted Biodiversity Management Committees (BMC's) at the seminar hall, GSBB, Saligao.



The training program was conducted by Ulhas Paranjpe, trustee of Jalvardhini Pratishthan a non-profit organisation with the mission to promote cost effective (low cost) methods of creating storage using Ferro Cement and Natural Fibre Cement technology.

A shallow pond was constructed at the campus of the Department of Science, Technology and Environment using the low cost Ferro Cement technology for the benefit of wildlife visiting the campus.

During 2017-18 Jalvardhini has constructed Ferrocement water tanks with Participatory approach. They have constructed 36 water tanks, toilets, pond covering 4 States and 6 Districts of Maharashtra.

They also conducted 7 Workshops at different locations and lectures at six different places.

Some of them are in Sindhudurg District (Kudal), Ratagiiri District (Guhagar, Sangameshwar, Khed), Raigad District (Roha, Alibag.Karjat), Pune District (Bhor), Thane District (Murbad), Solapur District (Madha). They also

Contact Us

www.ferrocementindia.com



spread their works in other states. Some of them are Karnataka State (Ramnagar District), Gujarat State (Rajkot District), Telangana State (Kamareddy) and Goa State (Saligao, Bardez). Ulhas Paranjape said he is using the natural fibres like Ambadi in the water tanks. The results are quite good and thus steel can be avoided. Villagers are appreciating the ecofriendly technologies thereby saving in costs.

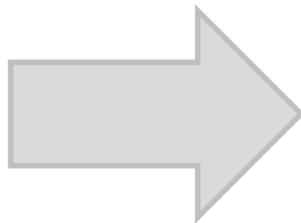
Deep Ferrotech to construct a resort

Scenic view of the backwater of Dhom Dam near Wai, in Maharashtra is enhanced by the elegant architecture. The resort is owned by Amol Thorve and the Architect is Ajit Salve. 5 meter high ferrocement arches are being constructed in front of the water. Nandkumar Jadhav said the work will be completed in 6 months. Seven buildings, each having 2 stories, a separate pantry and bedroom will be erected. The arches of 50 mm thick ferrocement are supported with 50 mm thick stiffeners from inside. Each building is 6 meter by 5 meter in plan. Plinth level of the building is much higher to enjoy the scenic view.



India to introduce Intact structures system from USA

Recently Owen Waldschlagel, ferrocement professional from Intact Structures visited India. His system to build a ferrocement village was discussed with Ferrocement Society's officials and members. Er Rajendra Pawar, Er Ramchandra Nitturkar, Er Padmanabh Lele shared their views. Owen says the system is cost effective and saves 40 percent in conventional constructions. He is having a dialogue in Vishwakarma University also. Girish Sangle Hon Secretary assured to help Owen in forming cost estimates and Indian labour for construction. Owen expects assistance for allotment of land piece for experimental construction. The buildings will earthquake resistant and self-sustaining, Owen added. Slums in the cities can be rehabilitated with his system giving the slum dwellers a better environment.



Arch type ferrocement dams built by Savitribai Phule Mahila Ekatm Samaj Mandal, Aurangabad near Aurangabad. Suhas Ajsaonkar said the storm discharge has already passed over the dam in last rainy season.



(Contd From page 1)

There are two methods of construction one is reinforced cement concrete (RCC) and the other is this ferrocement technology. There is a basic difference between the two methods. The method of designing structures with the help of this ferrocement technology is also different than that for RCC. In order to convince the world on this aspect Dr. B N Divekar has written a book on how to design ferrocement structures.

The inauguration of the book written by Dr. B N. Divekar took place on 8th April 2018 in the Firodiya Hall of *The Institution of Engineers (India), Pune* at Shivaji Nagar, Pune. It took place at the hands of Mr Vijay Shivtare, minister for state, water resources and water conservation, Maharashtra state in the presence of Mr Shashikant Limaye, technical advisor of Pune Metro. Many Institutions in the field of technology and construction witnessed this function. Society desires that a **“school of ferrocement”** shall be started in Pune very soon.

If we look at the ground reality this technology of ferrocement is very much matching with the way people use long stem bamboo sticks covered with mud mortar for their huts, in order to get shelter against Sun and rain. Thus this technology has got a great potential for employment creation, specially in rural areas where the hands are in search of jobs that will give them a good remuneration. In Maharashtra we have many organisations working in the field of social services and they are working on the issue of water. Our society intends to build small dams which will harness water. These dams will be built in collaboration with corporate sector through the funds they have at their disposal as CSR.

Press filling of mortar is a labour intensive job. However the society has developed a machine, with the help of which mortar can be sprayed and final product of ferrocement member can be obtained. As you know the government has banned use of thermocol in any industry. However we have proved that as thermocol is a very low cost material and which is also heat resistant can be used in

ferrocement members and this will help in disposal of whatever thermocol is existing today. This will also take care of environment, besides giving light weight structures, as it will not be visible from any side and it will be remaining inside the walls, wall panels, slab panels, etc., forever. Though not eco-friendly thermocol is a very cheap material and can be effectively used in heat resistant structures. So we have requested the government not to ban thermocol and plastics till we find any alternative to it.

Lighter the structure, more resistant it is against the earthquake. By using this principle we are going in for Ferrocement as the main material for construction of homes. The wire mesh inside any Ferrocement member helps in retaining it against the forces caused due to earthquake. the slab will not collapse. Also as the total structure is lightweight, the expenditure on foundation is also reduced to a great extent. If a farmer decides to build his own home with this technology of ferrocement, we train him free of cost, as to how to do it. Also effectively he can save 30% on the expenditure of his home if it was built otherwise. This is mainly due to the labor cost, which he can save upon by erecting his own home at his own hands. One of the organisations affiliated to ferrocement Society Jalvardhini is from Mumbai. They have built thousands of ground level water tanks over last few years and they have trained many villagers in constructing such types of water tanks. Ferrocement is also useful for building small arch type dams/plugs across nallah. One such nallah plug is christened as Balchandra. They are very useful. If the government so desires, this technology can be used on very wide scale all over Maharashtra for water conservation. In order to achieve all these goals a committee has been appointed under the chairmanship of the Chief Engineer, CDO in Maharashtra Engineering Research Institute, Nashik. The panel of experts has already studied all the aspects of the subject and submitted a detailed report to the Government of Maharashtra.

*Now you can become life member of the
Ferrocement Society
Email- ferrocement@gmail.com*



Welcome to the 12th
International
Symposium on
Ferrocement and Thin
Cement Composites-
the technology on a
human scale –

FERRO12 that will take place from July 15th to July 18th, 2018, in Belo Horizonte, Minas Gerais, Brazil. The symposium will be held at the Regional Council of Engineering and Agronomy of Minas Gerais (Crea-Minas) for the first time in South America.

Ferrocement arrived in Brazil in 1950 with a visit of the Italian architect Pier Luigi Nervi to São Paulo, where he delivered a course about reinforced concrete. At the time, Professors Dante Martinelli and Frederick Schiel from the School of Engineering of São Carlos at the University of São Paulo learned and used the technology in the construction of the school pavilions already in 1960. From this first contact, we developed several studies and applications of this technology, what stimulated the creation of the *Group of São Carlos*, that devoted themselves to the research and development of ferrocement in Brazil.

The studies by the *Group of São Carlos* brought great benefit to the work of architect João Filgueiras Lima, known as “Lelé”, who used the great potential that this technology offers in his architectural production. His work was famous by public buildings, schools, hospitals, community equipment, and drainage and retention projects. Lelé saw in Ferrocement an alternative technology to enable slum upgrading projects in Salvador, where light weight material was a key issue due to the conditions of the access to construction sites.

The similarity of the construction of pug process with ferrocement stimulated Prof. Alexander Diogenes to implement the *Ferrocement Project* in Ceará Federal University in the 1980's. This project made ferrocement a popular and professional technology in the Brazilian semiarid region with applications in healthcare, sanitation, housing, food, rural infrastructure and art. In the 1990's, the Sanitation Company of Minas Gerais studied the technology and invested in the construction of dozens of

water treatment plants (WTP), Sewage Treatment Stations and Reservoirs up to 500 m³. They built a WTP in ferrocement capable of storing 150 l/s – the world's largest plant – in Divinópolis/MG.

FERRO12 will be named after an adapted quote from Lelé: “*The technology on a human scale*”, referring to Ferrocement, of which strength, elasticity, flexibility and low cost, associated with moldings, allows ‘resistance by its form.’ In addition, its free shape and size, light weight, affinity with pre-molding and the possibility to dispense the use of molds, make it even more suited to low-income housing projects, small school buildings and urbanization, sanitation and drainage works in densely populated urban areas. It is with the intent to resume research and production of knowledge in this area that Crea-Minas and the Union of Engineers of Minas Gerais are engaged on hosting **Ferro12**.

KIRAN RAJURKAR Constructs 2 water tanks in Adiwasi area



Kiran Rajurkar is working as Executive Engineer in CIDCO, New Mumbai. In the memory of her parents she has constructed 2 water tanks using ferrocement. One tank is in Neral and another in Guhagar. The adiwasi people were really needed drinking water expect for rainy season. The need of people was recognized by Er Kiran Rajurkar. She is inspired by the work of Er Ulhas Paranjape, who built thousands of ferrocement water tanks in the villages. Kiran has done a wonderful job by training the villagers and supervising in spite of busy schedule.

She said, many companies can come forward to spend their CSR funds. Ferrocement Society will help them building such water tanks and small dams.

3 days Workshop in META Nashik



META Nashik organised Ferrocement workshop for Government engineers

A three day workshop was recently organised in Maharashtra Engineering Training Academy, Nashik. Er Chandramohan Hangekar, President FS introduced the technology and its applications worldwide. He explained the Society formation to promote the technology. Government of Maharashtra is now ready to publish a handbook for field engineers who really need this technology in many projects. Er Girish Sangle demonstrated the construction and explained the design logics. Er Arun kumar Lawane presented his case study of Buldhana pump house ferrocement roof shell. Nandkumar Jadhav explained how he has used the ferrocement in buildings and other objects. Participants from PWD and WRD visited ferrocement site works at Manmad, Canal lining etc. They visited the 25 years old ferrocement boat and a water tank in MERI campus. The objects are still in proper condition.

Replacement of Walls More carpet area

Ulhas Adhav recently renovated a two bed room flat in Erandvane, Pune. He replaced the 300 mm thick brick walls with 50 mm thick ferrocement walls thereby increasing the carpet area. Previously in another flat he has converted a big single bedroom into 2 bedrooms flat. The flat ferrocement wall was properly given stiffeners to protect from buckling effects. He said it is necessary to have additional bed rooms for many flats in metro cities.

Utilising the carpet area just by using light weight partition wall construction is becoming popular in cities. He introduced "Flat without walls" concept. Builders can allow their customers to have their own planning of walls. Light weight ferrocement partition walls have flexibility of planning. "Bed on Bed" concept is also possible in cities like Mumbai where hostels are built in a limited area.

Indian architect

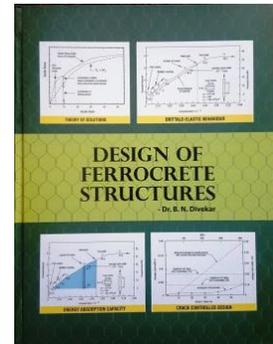


Balkrishna Doshi wins 2018 Pritzker Prize

Indian architect Balkrishna Doshi was awarded this year's Pritzker Prize for being able to interpret architecture and transform it into buildings that respect Eastern culture, at the same time that he has improved the quality of life in his homeland, according to the judging panel's statement.

The Pritzker Prize is regarded as architecture's equivalent to the Nobel Prize. Long considered to be one of India's foremost living architects and urban planners.

Design of Ferrocement Structures



Dr B N Divekar, after his 35 years' experience, published a book on Design of Ferrocement Structures. The book is very useful for the designers. The method of design he used is entirely different. Ferrocement shall not be designed as RCC. The ready to use tables are also given in the book. Ferrocement society will organize design workshops for the interested engineers. The new book is available for Rs 2000 in FS office. For postage the charges will be extra. (ISBN-978-81-935515-5-4)



Greetings



Dear Girishji..
Great....Hearty Congratulations for organizing the grand event of 10th Birthday of Ferroccement Society.The event was extremely successful and well attended. The publication of book of Dr.Divekar was a value addition in the event.This was one of the rare occasions of meeting all well wishers and friends. The day was memorable .Your efforts and exertion was worth appreciating.Due to your tireless efforts,the event achieved a great value. I wish to be part of all such events in future and will be waiting for assignments and responsibilities which you will assign on me.

Regards,
Dr.Sunil Kute



I am always intrigued and impressed by the fortitude and energy of the Ferroccement Society , India. In its being ...as a collective organization and the acumen of the many talented individuals that have created this society. Congratulations to all of your founders on the 10th Anniversary Celebration. And I look forward to working with all of you in the decades to come... On the day of this function I will be traveling and unfortunately unable to attend. I will be there in spirit and during the following week I will be located in Pune, India for a few days. In the near future I will try to communicate with the members of The Society, and hopefully arrange and attend meetings with them.

Best Regards,
Owen Waldschlagel

Welcome new members

LM-167	Arch Preeti Mohan Chorghe	Mumbai	Leadarchconsultants@gmail.com
LM-168	Er. Subirvendra Khandekar	Pune	Khandekarsub@gmail.com
LM-169	Smruti Tulsiram Singh Thakur	Nashik	smruti.thakur@rediffmail.com

One Day waorkshop in Sangamner

Amrutvahini College of Engineering, Sangamner and Ferroccement Society, India jointly organized this one day workshop on 27 March 2018. Prof Amol Mehetre was the in charge of this event. Students are searching for new technologies which will be helpful after graduation. The intention of this workshop was to expose the students to the new technologies which can help them to become successful entrepreneurs. 76 SE students participated with 4 faculty members of this institute.

The workshop was inaugurated by Mr Anil Shinde, CEO and Prin. Dr M A Venkatesh. He said awareness of new technologies is very essential for the students.As such training will be very helpful for the students. Dr. J B Gurav, Head of Civil Engineering Department was also present. Ferroccement experts like Arch Satish Paranjape, Nashik and Arunkumar Lawane Professional Engineer also visited the training of workshop form Nashik.



The workshop coordination was done by Prof. Amol Mehetre. Anchoring of the program was nicely done by Vaishnavi Shiledar, Shradha Rahane. The program was successful due to the volunteers and coordinators, which include Vaidehi Sawarkar, Priti Sable, Nikita Wakchaure, Nikita Sonawane, Abhishek Thorat, Pankaj Sawant, Sushant Kanawade, Nilesh Kadam, Abhijeet Jadhav, Lokesh Patil and Bharat Thorat.

*Get your monthly News bulletin by email free.
Email- ferroccement@gmail.com*