

Deep Soil Mixing is a versatile ground improvement procedure that can be applied to most weak to strong soil depending on the application. Various deep mixing methods (DMM) can be used to perform soil-cement columns, soil mix panels, soil mix trenches and mass stabilization. The application of DMM include soil reinforcement as an alternative to pile groups, retaining walls, cut-off walls, dike reinforcement, in situ remediation, liquefaction risk mitigation, and underpinning.

Third pre-conference webinar of DFI India 2020 discussed different applications of DMM. Register for:

DFI India 2020 Virtual Conference

Connecting Technology and People

19th & 20th November 2020



Picture Courtesy:



Volume 6 Book 4, Oct 2020

DFI of INDIA

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Quarterly Newsletter from Deep Foundations Institute of India

www.dfi-india.org

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Sailing through difficult times

Everyone can rise above their circumstances and achieve success if they are dedicated to and passionate about what they do – Nelson Mandela

DFI India team is determined to sail through the current tough times with more vigour as it is passionate about its mission. Its goal is seeing this institute evolving as the finest institute in the future that provides value addition to the Indian deep foundation industry in multiple ways.

The Indian construction industry is sailing through a most difficult period over the last 6 months because of COVID 19 pandemic and this scenario is expected to improve by next year. As per the various global credit rating agencies' reports, India's GDP growth forecast for the 2020-21 financial year projected to contract by around 12 percent. This is not encouraging news for the already distressed construction industry. DFII office sustains based on sponsorship and delegates fees in conference programs, membership fees, and other donations including the in-kind contribution from various organizations and individuals. The current situation is depriving these avenues drastically, and DFII team is exploring different solutions to close the revenue gap.

I have pleasure in sharing a few positive developments in this direction in the last three months.

Way forward for managing difficult times

DFII will continue its message to owners/consultants/contractors to look forward to adapting new technologies/good work practices/

deploying skilled manpower in handling the foundation projects.

DFII's last three years' efforts in successfully completing the CFA test pile project gives a ray of hope in this direction. DFII team's persistent efforts to canvas this success story resulted in few contractors/consultants coming forward to try out this technology in their projects.

Thankful to DFII active members, Mr. V K Panwar, geotechnical head of Engineers India Ltd, Mr. Manish Kumar, Executive Vice President, ITD Cem, and Mr. Hari Krishna, MD, Keller for teaming up to explore the possibilities of deploying this technology in some large refinery projects. Similarly, construction majors like L&T, Afcons and others impressed by DFII trial project results are keen to pursue this technology in their future projects.

We are hopeful of a couple of projects adopting this technology in the coming year, and more projects switching over to this in the future once its success is experienced by the industry stakeholders. Understanding that CFA piling takes only a fraction of time for installation as compared to bored cast-in-situ piling and scope is



Mr. G Venkata Prasad

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The executive committee members of DFI of India represent all the stakeholders in the foundation research, design and construction. The members will express their views about the role of DFI and other similar organizations in the development and transfer of modern technology for infrastructure development of India.

available to cover around 40% of the bored cast in situ piles over a while, one can understand the phenomenal value addition one technology initiative can contribute to the Indian construction industry.

DFII efforts are required for two/three years more till CFA pile technology becomes a common feature by providing required handholding to the industry stakeholders. Thankful to Mrs. Mary Ellen, Technical Director of DFI, for helping us in organizing an interesting panel discussion program covering CFA pile technology as a part of this year's DFII virtual conference program.

Skill Training Program

In spite of their busy schedules in managing business affairs during current turmoil, required support and encouragement are being provided by the members of the DFII committee for geotechnical investigation for foundations in finalization of course materials for

- a) 3-month lab technician training programs to cover unemployed youth,
- b) one week program for existing lab technicians,
- c) one-week program for field supervisors.

With the support of the National Academy of Construction at Hyderabad, we have the plan to set up a full-fledged soil lab by the early part of 2021 for commencing the lab technician program in stage one and field supervisor program in stage 2.

Our efforts in this direction are well appreciated by one and all from the industry, and this gives us hope to skill all the manpower involved

in geotechnical investigation jobs in India in a few years down the line. We have a few more programs on agenda for enhancing the geotechnical investigation practices in India and all the said efforts will help in standardizing industry practices over a period of time.

Conferences/Webinar Programs

With the backing of DFI technical Director Mrs. Mary Ellen and DFII team Mr. Mohamed Athif, Mr. Pranav, and Mr. Mahendran put stupendous teamwork in developing the required platform/infrastructure in a short time to switch over to virtual mode in conducting webinar/conference programs this year. DFII launched this year, educational webinar series on Steel Retaining Structures and Foundations. In total, 7 webinars were conducted and got wide applause for their content and international speakers from the participants.

DFII team is putting required efforts to launch Women in Deep Foundation webinars this year and programs relevant to the student community from 2021 which will benefit them immensely in the long run.

These positive developments serve as a source of strength to the DFII team to face any big challenges. This apart, good words from well-wishers from time to time about DFII activities are highly motivating and gives us a sense of satisfaction that are we in the right direction.

Cover Story

DFI India 2020 Virtual Conference



DFI-India 2020 Conference on Deep Foundation Technologies for Infrastructure Development is being held on November 19-20, 2020, as a virtual conference. Organized by DFI of India (DFII) in collaboration with Indian Geotechnical Society – Chennai Chapter, the event includes 3 to 4 hours each day of live, online presentations from industry experts on contemporary topics in deep foundations.

The conference kickstarted with a series of three pre-conference webinars.

On August 20, **Amy Cerato**, Ph.D., P.E., University of Oklahoma, led a webinar on “Dynamic and Cyclic Applications of Grouped Helical Piles”.

On September 17, **Karsten Beckhaus**, Dr.- Ing, Bauer; **Christophe Justino**, Soletanche, and **Peter Faust**, Malcolm Drilling, led a webinar on “EFFC-DFI Guides to Tremie Concrete, Working Platforms and Support Fluids for Deep Foundations”.

On October 22, 2020, webinar titled “Deep Mixing Equipment and Field of Applications of the Deep Mixing Method,” was presented by **Nicolas Denies** and **Noël Huybrechts**, Belgian Building Research Institute (BBRI)/TC211 ISSMGE.

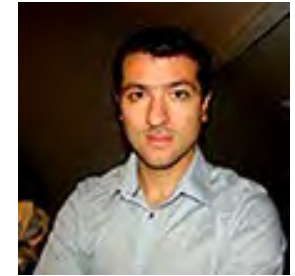
[Continued on page 12](#)



Amy Cerato



Karsten Beckhaus



Christophe Justino



Peter Faust



Noel Huybrechts



Nicolas Denies

Visit Conference website here:

[DFII2020](#)

Check Detail Schedule here:

[Schedule](#)

Check Sponsorship Opportunities here:

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Register for DFII 2020 Conference here:

[DFII2020 Registration](#)

My Experience with DFI India



Dr. V. Balakumar

Senior Consultant,
Simplex Infrastructures
Limited, Chennai

The drive in me to join DFI as a member generated nearly 10 years ago. At that time there was no Indian chapter and so I joined in DFI through the parent body at the US. The membership certificate was really a status symbol for me and I have been attaching a lot of value and importance to that. I realized the values of the magazine and the journal when I started using the information to support the views of my organisation both in the internal meetings and in the meetings outside with our clients. DFI although primarily appear to serve the purpose of industries and professionals involved in the industry, it is to be noted from the journal articles that DFI is welcoming research and academic activities, particularly when it is field oriented.

Thanks to the enormous efforts of Dr. K S Ramakrishna and Mr. I V Anirudhan, DFI India chapter was born in the year 2013 and from then on has grown to the present stature. DFI India has been conducting conferences by selecting centers from all four directions; to be precise, it was in Chennai (south) Bombay (west) Delhi (north), and Kolkata (east) which had shown the novel method of selecting venues. The conferences were conducted in such a manner that there were hardly any complaints. One day workshops were held on some very interesting topics related to piling.

My personal experience given below will establish the conviction I have, in stating that DFI is a knowledge bank for both professional and research-oriented persons. There was a situation, wherein it had to be established that ground movements can cause appreciable lateral displacements in the piles already installed. The ground movement and disturbed piles are shown in Figure 1 and Figure 2.



Figure 1



Figure 2

As I was browsing through the DFI Journal, one of the papers published in its journal issue Vol I No 1 pp .37-53, came very handy; the paper was written by Harry G. Poulos. The paper that was published in August 2012 (pp 45-57) authored by Mohammed Sakr gave me very valuable guidance for developing a termination criteria to identify the suitability of the strata for terminating the pile when piles are installed with hydraulic rotary rigs. The torsional resistance model is presented in Figure 3.

The paper by Hessam Yazdani et al., (2013) – pp 17-27 on ant colony optimisation method for the design of piled raft is the second paper on

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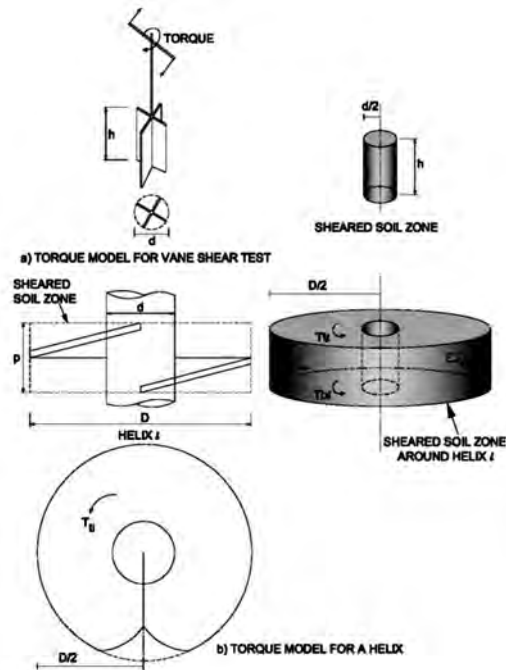


Fig. 3 (Courtesy- Mohd. Sakr, 2014)

optimisation, after the papers by Kim et al (2001) on the optimisation of piled raft design using Genetic algorithms specifically for the pile layout in the piled raft. In fact the availability of back issues of DFI journals in the web site is perhaps the biggest and most useful service offered by DFI for those who work in the area of piling with a flair for field oriented research.

As a professional involved in piling, I really admire the efforts of DFI in bringing CFA

(Continuous Flight Auger) piles (Refer fig.4) in this country, wherein, we have been saddled up with conventional driven piles and bored piles; the only sophistication we have so far achieved is the use of hydraulic drilling rigs; but without using the monitoring panel.

CFA piles are definitely a boon when we design the piles without depending much on the end bearing. In other words, for

example, in the case of a piled raft, the pile groups will be mostly floating piles and CFA piles come very handy as piles of fixed length. One very important advantage here is the effect of installation technique appears to be minimum on the in-situ geotechnical parameters. However, these aspects need more study in the field.

The present activities associated with the Educational Webinar Series are in my opinion a very innovative concept. It is very difficult to bring in, the various aspects of design and construction of sheet pile wall, for example, and its utility as permanent, semi-permanent, and temporary structures. The presentation includes the availability of various types of sheet piles and installation methods.

In the first pre-conference webinar under the DFII2020 virtual conference, the introduction of helical piles was really thought provoking, and its utility in supporting structures like transmission towers, windmills, etc need to be studied for our geotechnical conditions at various places.

It is a well-known fact that practice comes from theory and theory gets improved by practice through observational studies. DFI in my opinion caters to the need of both. The luxury of information through advertisements by the equipment manufacturers and data furnished by the professionals on execution provides a wealth of information and on many times the given details can be used with authenticity. In short DFI membership looks to be a value addition for professionals.

The author wishes to acknowledge the support provided by the management of Simplex Infrastructures Limited throughout his career spanning over 45 years.



Fig. 4 CFA RIG- Courtesy - DFI India

Ground Improvement and Pavement Stabilisation with range of Geosynthetic Products– A Case Study

Talegaon Dabhade is a town in Mawal Taluka, Pune district, in the Indian state of Maharashtra. It is 120 km from Mumbai and 35 km from Pune. Situated very close to Lonavala, which is a hill station, Talegaon receives ample rainfall during monsoon. The Talegaon – Katvi road is situated right next to the MIDC area of Talegaon. Katvi and Ambi are two areas adjacent to each other which are the upcoming locations on Talegaon MIDC Road. At the project site of Gat No 40/1, Talegaon-Katvi Road, Village Katvi, Mawal Taluka, District Pune, a site visit was conducted by Engosym consultants based on the request of the client M/s Earnest Group. Aayush Park is a land development project planned and developed by M/s Earnest Group which is surrounded by meandering Indrayani river and Sahyadri hills. The soil investigation report indicated presence of weathered basaltic rock under a layer of overburden. The overburden comprised of filling, brownish stiff clay and clay with rounded rock fragments. The thickness of overburden layer was observed to vary from 3m to 6m deep from the existing ground level. Geotechnical investigation report also indicated presence of ground water table at a depth of 0.5m to 2m from the existing ground level. The approach road to the plot to be developed was at a lower elevation as compared to the elevation of the main plot. The natural topography of the site was such that entire surface flow of water was directed towards the approach road location. To add to the complexity, a stream is flowing below the approach road which flows full to its capacity during monsoon as it carried a certain amount of discharge of the Indrayani river.



Fig 1. *Accumulation of water at the approach road location*



Fig 2. *Natural sloping ground profile*

The client wanted to ensure sale of the development scheme and which was possible only if the area had a good, safe and smooth access to the site. In addition to all the criticalities cited in the earlier paragraphs, consistent passing of heavy loaded vehicles was also expected during the development stage of the area.

Considering the critical factors like poor conditions of the underlying soil, shallow ground water table, heavy rains and the loading expected on the pavement, it was suggested to strengthen the approach area zone with flexible and permeable measures.

Composite solutions with range of geosynthetic products were considered and designs were carried out based on the in-situ parameters and the relevant characteristics of the geosynthetic

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product in consideration for the intended application. The approach road was excavated to a depth of 1.5m and the area had to be dewatered completely before commencing any treatment measure. The base layer was sun dried and was dusted with a layer of Murrum (Murrum soil comes under laterite soil. Laterite is a soil and a rock type rich in iron and aluminium. Murrum soil is also referred as being a rock type but it is not a rock). Once a firm base was created, a layer of non-woven geotextile was provided to act as a separator between the underlying soil and the treated layer. This geotextile would also act as filter media at the base level.



Fig 3 and 4: *Laying of non-woven geotextile, Laying of woven polyester geogrid*

The geotextile layer was followed by a 100mm to 150mm thick layer of murrum filling that was compacted and prepared for laying a layer of polyester geogrid. This geogrid would act as basal reinforcement layer and its function is to uniformly distribute the stresses to the base

strata. A layer of geomembrane was provided towards the top of the pavement to prevent the infiltration of the surface water to the base layer. Bi-axial geogrid was laid at the topmost layer to act as tensile membrane to effectively transmit the stresses to the base layers.



Fig 5 and 6: *Laying of Biaxial geogrid towards the topmost layer, Gravel packing over the bi-axial geogrid.*

Conventional pavement layers were laid followed by the final bitumen layer. It is interesting to note that Gabion layers were provided on the edge of the roads to act as confining element and ensure retention of the filled-up layers.

Geosynthetics have been used for pavement stabilisation to address various functions like separation, filtration, drainage, sealing and reinforcement. The improved performance of pavement due to geosynthetic reinforcement can be attributed to three mechanisms, lateral restraint, increased bearing capacity and tensioned membrane effect. These methods effectively solve the problem with advantages like assured quality, being ready factory-made products, ease in installation, reduced carbon footprints, saving natural resources and cost effective. With the cited advantages, attention to quality control

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of installation at site assures the performance of the solution as per design and hence a problem free structure was achieved. In the project discussed above, the client is satisfied with the solution provided as there was no water logging or settlement observed at the approach road and a smooth ride was assured to the prospective clients of Earnest group.

Author:

- Annapoorni Iyer

B. E (Civil), MBA (Infra and Constn) , C. Eng

Founder, Engosym Consultants

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WICCI - Council Member Maharashtra Social Media Council

WICCI is a premier All-India National Women's Chamber empowering women entrepreneurs and leaders in all walks of life through advocacy, proactive representations to government, implementing projects for women via funds allocated by various government agencies and corporates. It also aims at bringing awareness on all issues that concern women in their workplace. WICCI is dedicated to inspiring women to achieve success and economic independence through business creation and self-employment, growing one's voice, influence and impact in economy and society. WICCI promotes and supports business success for its members through network building, fellowship, mentorship, and sponsorship of select endeavours. Through members' initiatives and collaborative relationships, WICCI promotes professional opportunities for economic success and business leadership.

WICCI is represented strongly via its Councils at all levels - like the National Executive Council, Regional Executive Councils (North, South, East, West & Central), State Councils in each State, Sector specific Councils both at National and State level.

Annapoorni Iyer has been appointed as Council member, Maharashtra Social Media Council of WICCI. WICCI and Annapoorni look forward to support more and more women in the industry in their future endeavours.

Annapoorni is an active member of DFI & WiDF India, we congratulate her and wish her all the best.

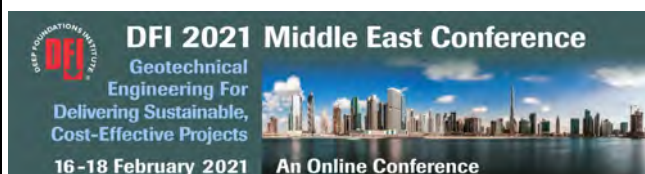
Adapting to the current situation DFI conducted most of its programs virtually (Online) this year the latest one being DFI45. DFI is elated seeing the support and participation its programs are getting. DFI and its regional chapters are coming up with interesting programs across the globe. The programs will see some of the most eminent speakers in the industry delivering keynotes on important geotechnical topics, new technologies, research, case studies, etc.

We hope to see your continuing support and active participation in our upcoming programs.

DFI Upcoming Events

Event	Date*	Venue
DFI India 2020 - Annual Conference	Nov 19-20, 2020	Virtual Event
DFI 2021 Middle East Conference	Feb 16-18, 2021	Virtual Event
SuperPile 2021	June 23-25, 2021	Philadelphia, Pennsylvania
Deep Mixing	July 05-08, 2021	Gdansk, Poland
S3: Slope, Slides and Stabilization	Aug 03-05, 2021	San Francisco, California
46th Annual Conference on Deep Foundations	Oct 12-15, 2021	Las Vegas, Nevada
DFI-India 2021: 10th Anniversary Conference	Nov 18-20, 2021	Chennai, India

*Date subject to changes



Cover story in each issue of the newsletter showcases a technology/work practise that is not very popular in India, but has tremendous potential for India's infrastructure development. Readers may contribute to the cover story.

DFI India 2020 Virtual Conference

Day one of conference (19th Nov 2020) highlights

- Keynote lecture by **Maurice Bottiau**, Franki Foundations: *"Recent Advances in the Understanding of Augercast Piles and Displacement Augercast Piles and Impact on Their Design"*
- Keynote lecture by **Antonio Marinucci**, Ph.D., MBA, P.E., V2C Strategists: *"Recent Advancements to Enhance Performance and Reduce Risks in Deep Foundations and Ground Improvement"*
- Presentation by **Franz-Werner Gerressen**, BAUER Maschinen GmbH: *"Confined space and inner-city projects - Future challenge and opportunity for diaphragm walling"*
- Panel discussion on *Continuous Flight Auger (CFA) piles - A System Changeover and Risk Assessment & Mitigation*

Day two (20th Nov 2020) highlights

- Keynote lecture by **Conrad Felice**, Ph.D., P.E., P.Eng., D.G.E., F. ASCE, C. W. Felice: *"Overview of the Use of Geotechnical Baseline Reports"*
- Keynote lecture by **Harry Poulos**, D.Sc. Eng., Coffey Service Australia, and professor emeritus, Sydney University: *"Applications of Piling to Infrastructure Development"*



Maurice Bottiau



Antonio M



Conrad Felice



Harry Poulos



Franz-Werner



Mary Ellen



PVSR Prasad



Sachin Kamat



Biswanath D

Check [Page 5](#) for details Pre-Conference Webinars

- Presentation by **Mary Ellen Large**, Director of Technical Activities, DFI: *"Non-Profit Profits"*
- Presentation by **PVSR Prasad**, Keller Ground Engineering India Pvt Ltd: *"Performance of storage tanks supported by shallow & deep foundations"*
- Presentation by **Sachin Kamat**, ITD Cementation India: *Precast Driven Spun Concrete Pile*
- Presentation by **Biswanath Dewanjee**, Kolkata Metro Rail: *Case Study for removal of redundant steel joist piles under base slab of an operational metro station by NATM pilot tunnel for clearing the alignment for East West Metro line tunnels in Kolkata, India*

Panel Discussion - DFI India 2020 Virtual Conference

Date & Time : 19 Nov 2020 -5:55pm to 7:10pm IST

Continuous Flight Auger Piles (CFA Piles) - A System Changeover and Risk Assessment & Mitigation

DFI of India has provided local proof of success of CFA pile installation in Indian soil conditions with India labor. The successful implementation program produced design guidance, installation procedures, video documentation, and monitoring and testing verification. Barriers must be overcome for the system benefits to be widely realized in India, including lack of trained engineers to develop specifications for owners, shortage of proven Indian case histories, and limited availability of CFA kit and tooling. This panel discussion will present realistic, proactive strategies to overcome these barriers and increase the use of CFA piles.

The panellists are drawn from the important disciplines of the foundation design and construction as detailed below.

Moderator



Madan Kumar Annam, Head of Engineering, Keller Ground Engineering India Pvt Ltd

will provide a brief introduction of CFA and background of the demo program and the structure of the panel discussion, and outline design aspects, equipment considerations, and workforce skill and quality needed for successful implementation.

Owner / Consultant view on public sector projects



Vijay Kumar Panwar, Geotechnical Head, Deputy General Manager, Engineers India Limited (EIL)

will highlight the issues in the public sector that could impede adoption of CFA pile implementation, and discuss the requirements and philosophies that could be adopted for implementation.

Specialist Contractor



Andres Baquerizo, P.E. Global Product Leader and the Vice President for Keller Florida (United States)

will present three case histories highlighting successful deployment of the technique for private and public projects, and the use of advanced technology to prove pile designs.

Equipment Manufacturer



Franz-Werner Gerressen, Director of Method Development Department, BAUER Maschinen GmbH (Germany)

will discuss availability of equipment, safety, and modern tooling, materials, and instrumentation.

For more information on DFI India 2020 Virtual Conference & to register, visit <https://www.dfi-india.org/DFI2020/>

DFI of India initiated various technical committees for the development of Indian Geotechnical Industry.
Be a volunteer and help to make Indian Foundation Industry Strong.

DFI of India News

DFI of India is very happy to announce the following progress updates:

DFII CFA Pile Technology Implementation Committee finalised the document “Guidelines for Design and Construction of Continuous Flight Auger Concrete Pile”, and is in discussions with BIS for way ahead on having a CFA code in India.

The CFA Guidelines document is available on request. To get your copy send a request to DFI India office at activities@dfi-india.org

DFII Committee for Geotechnical Characterisation for Foundation (DCGCF) is working along with National Academy of Construction (NAC), Hyderabad to set up an Advanced Geotechnical Laboratory for its “Soil Investigation Laboratory Technician” training program. NAC has initiated the budget approval and equipment procurement process.

DFI India is launching its Student Initiative program “Groundwork” during its virtual conference on 20th Nov 2020. The program will initially consist of monthly webinar program starting Jan 2021 on different aspects of working in Foundation Industry. Registered students for this program will get complimentary DFI Membership along with networking opportunities and other benefits.

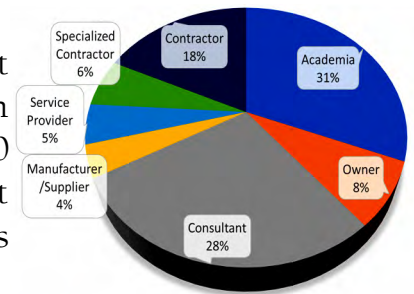
If you are a student, register here for the program: [Registration- DFII Groundwork](#)

WiDF India is coming up with a webinar series starting Dec 2020. Details will be rolled out and publicized soon.



DFI India celebrates the huge success of its first Educational Webinar Series on Steel Retaining Structures and Foundations. The series consisted of Seven webinars on different aspects of Sheet Pile construction.

The series received humongous support from the industry and set records with over 950 registrations from more than 40 countries worldwide. The registrant distribution pie chart shows the series interested all the sectors of industry.



Conducting programs at such level is difficult without getting proper support from industry, and DFI India recognises & thanks all the sponsors of this webinar series for their generous support. The series had four sponsors:

Webinar Series Sponsor *ArcelorMittal Projects India Pvt Ltd*, Webinar Series Co-Sponsors *Teamwork Engineering Solutions Pvt Ltd*, Webinar 2 Sponsor *Kamar Infrastructure Pvt Ltd*, and Webinar 6 Sponsor *GIKEN Seisakusho Asia Pte Ltd*.



[Read Deep Foundation Magazine Sept/Oct 2020 issue \(Click\)](#)



DFI India Financial donor appreciation

DFI India's effort is to enhance the Indian Foundation Industry. We are widening our reach in the industry to garner more support for its initiatives and for wider implementation of its mission of enhancing Indian Foundation Industry comparable to the global best. We are seeking support towards this goal in form of availing DFI membership, volunteering support, and financial donations. .

DFI India, being a non-profit organisation, thrives solely on the support it receives from the industry. DFI India thanks individuals and organisations for believing in its mission, and coming forward to support DFII.

Below is the list of all the financial donors in 3rd quarter 2020. DFI India thank one and all.

DFI India - Financial Donor List		
Sl. No	Name	Amount (INR)
1	M/S. SVINT Engineering Pvt Ltd	15,000.00
2	Mr. Y. Ramkishan	25,000.00
3	Mr. Periyasamy Ramamurthy	5,000.00
4	Mr. K. Satyender	10,000.00
5	Mr. Bikshapathi K.	10,300.00
6	Mr. B. Abdullah Reddy	25,000.00
7	Mr V. Chinna Reddy	15,000.00
	Total	1,05,300.00

WHAT CAN DFI DO FOR YOU?

Overview

DFI is an international association of contractors, engineers, suppliers, academics and owners in the deep foundations industry. For more than 30 years, we have brought together professionals for networking, education, communication and collaboration. As a member, you help create a consensus voice and a common vision for continual advancement in the planning, design and construction of deep foundations and excavations.

Find Common Ground. Become a Member of DFI

- Network with thousands of members and industry professionals worldwide
- Get involved locally through DFI's active presence in Europe, India and the Middle East
- Strengthen your knowledge base and obtain practical information at seminars, short courses, workshops and conferences
- Collaborate with colleagues by joining one of 15 active Technical Committees, Regional Chapters or a DFI group
- Gain visibility with a corporate member listing on the DFI website, which has 20,000 views each month
- Connect and communicate with industry peers through social media such as DFI's LinkedIn Groups
- Access OneMine.org and download up to 130,000 articles, technical papers & books from DFI & organizations all over the world - at no cost



DFI India 10th Anniversary Conference on Deep Foundation Technologies for Infrastructure Development in India

November 18 - 20, 2021*

**IIT Madras,
Chennai, Tamil Nadu, India**

DFI-India 2021, 10th Anniversary Conference on Deep Foundation Technologies for Infrastructure Development in India, is taking place in Chennai, Tamil Nadu, India. This event is being organized by DFI of India in collaboration with IIT Madras, and Indian Geotechnical Society - Chennai Chapter. It will present the successes and failures of geotechnical foundation work in major projects and current research in the advanced foundation design and implementation that are currently being pursued in premier technology institutions.

For more information, visit www.dfi.org/dfieventlp.asp?13430

*Dates are tentative

This e-newsletter of DFI of India is available at <http://dfi.org/enews.asp?india>

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