

HIGH STRAIN DYNAMIC TESTING (HSDT) FOR BORED CAST-IN-SITU PILES

High strain dynamic testing (HSDT) is an established quality assurance procedure for determining the vertical resistance of pile foundations, along with several other outputs. The method also provides information on pile integrity, quantifies the same and is hence widely used when other integrity methods show defect. The method is applicable to practically all types of pile foundations, and this article discusses bored pile foundations. Read more on [page 3](#).



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Quarterly Newsletter from
Deep Foundations Institute of India
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High Strain Dynamic Testing for Bored Cast-in-Situ Piles

Quality control and quality assurance procedures are mandatory to ensure the quality of bored cast-in-situ (BCIS) piles, including their safe capacity. A low strain integrity test (LSI), also referred to as PIT, is used to assess pile integrity and detect any significant anomalies along the pile length. LSI is also used to confirm the pile toe condition, for rock socketed piles. The method is still dependent on individual expertise, and hence standardization of interpretation is not possible due to numerous variables during both the construction and testing processes. LSI, as part of the quality assurance program, has become very common in Indian projects. In most projects, 100% of piles are subjected to LSI. LSI procedure is detailed in IS:14893-2021.

A static maintained-load test method is mandatory in India for important projects to confirm the axial resistance of BCIS piles. The procedure is relatively more time consuming and costly than other methods to assess axial resistance, and the number of such tests in a project site is often limited to 1% to 2% of the total number of piles.

A procedure developed from the study of wave propagation through the pile shaft under a dynamic blow at the pile head is now used as a relatively rapid means of evaluating the static resistance for a deep foundation. The procedure, high strain dynamic test (HSDT), supplemented by advanced analysis of the measured data, is now common in major projects. The making of an Indian Standard for the HSDT procedure is underway, while ASTM D4945 and various other standards are available for performing the tests.

HSDT is typically performed by attaching strain gauges and accelerometers near the top of the deep foundation. These transducers are then connected to a data logger and signal conditioner to enable review, analysis and reporting of

the test.

Dynamic pile testing is conducted by striking the pile with a heavy hammer. During pile testing, complete dynamic measurements are obtained for each hammer blow delivered to the pile. Using a closed-form solution, the testing software calculates an estimated total resistance (static plus dynamic) for the deep foundation. The static resistance is then estimated based on a user-selected damping value.

The values estimated in the field assume that the pile is uniform throughout its length. Also, soil parameters such as quake and damping are assumed during the field test.

To obtain a more accurate estimate of static resistance, an iterative wave matching analysis is performed after field testing is complete. Wave matching allows the user to vary material and soil properties along the length of the deep foundation, including cross sectional area.

For a particular project in North India, two strain transducers and two accelerometers were attached to the pile head. They were mounted on opposite sides of the pile to mitigate bending effects during each strike of the hammer. The strain and acceleration signals were connected to a microprocessor-based signal conditioner and digital computer. Signals of pile top force and velocity were recorded and analyzed during each strike of the pile driving hammer and stored in the computer. The pile top force and velocity-time curves were displayed on the computer's screen.

Continued

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



Fig. 1: Typical Guide System and Hammer for Conducting HSDT (Geo Dynamics)

Figure 1 illustrates a typical guide system, and the hammer used to conduct an HSDT. The figure also illustrates the typical pile head preparation.

The hammer weight is normally 1-2% of the test load. A slightly lighter hammer can be used for deep-seated rock-socketed piles based on past experience, whereas heavier hammers up to 2% are preferred for long friction piles. The hammer weights currently used in the country for BCIS piles from 10 kN to 500 kN, depending on the test load, pile diameter, and length.

Since the HSDT procedure and subsequent resistance computation require certain judicious assumptions by the testing expert, test results are sometime

calibrated against a conventional static load test at a project. The calibration method and its derivatives depend on the objectives and purpose of the test and should be defined in advance before any test program. While testing of the same pile using both procedures is ideal, the pile is subjected to pre-loading during the first test, whether it is a static loading test or an HSDT. The static load test results are much more important for the project, as all decisions are based on the load-settlement behaviour derived from a static load test conforming to IS:2911- Part 4 (2015), and thus it is preferred that static load testing is done first, followed by high-strain dynamic testing, preferably on the same pile.

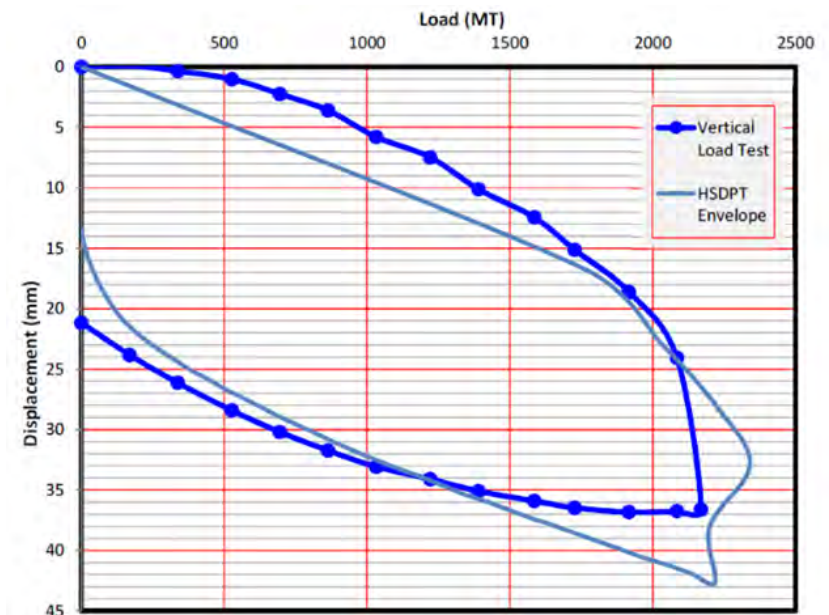


Fig. 2: Comparison between static load test and Envelope obtained from Multiple blows of HSDT

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Dear Fellow Members, Stakeholders and Esteemed Colleagues,

It is with immense gratitude and a deep sense of responsibility that I step into the role of Chairman of the Deep Foundations Institute of India (DFII). I extend my sincere thanks to the Board, Executive Committee, and each one of you for your trust and continued support. I also gratefully acknowledge the visionary work of my predecessors and the entire DFII team, who have built a solid foundation since our inception in 2013.



Dr. Sunil S. Basarkar

Chair, DFI of India

Over the past decade, DFII has made remarkable strides from organizing annual conferences for technology showcasing and dissemination to introducing CFA pile technology, geotechnical characterization initiatives, launching student outreach programs and conducting collaborative training workshops. We have truly become a unifying voice for owners, contractors, consultants and academia. Our technical committees have delivered valuable outputs, training certifications, resource material, technical publications and draft guidelines that are now being referenced by major stakeholders across the country.

Now, it is time to build on this momentum with greater purpose and pace.

India's infrastructure sector is expanding rapidly, with record budgetary outlays for railways, highways, metros and urban development. However, recurring geotechnical challenges continue to cause time and cost overruns. DFII is uniquely positioned to address these challenges by promoting global best practices, modern equipment and a skilled workforce. My vision is to make DFII

Message from New Chair of DFI of India

- Dr. Sunil S. Basarkar

the most trusted and action-oriented platform for deep foundations in India.

Over my planned tenure, I intend to focus on the following key priorities:

Wider Representation & New Technologies: I intend to expand our stakeholder base across all regions of India, including Tier 2 and Tier 3 cities. We will aggressively promote adoption of innovative foundation technologies and serve as a facilitator for technology initiatives by promoting the adoption of the latest and most suitable solutions for India, encouraging adaptation, foster possibilities of homegrown versions and be a part of Viksit Bharat dreams.

Empowering Smaller Contractors: A large part of our piling industry comprises small and medium contractors. I intend to bring them together to enable them to perform for better deliveries with higher quality standards. We are also aiming for structured training programs for rig operators and site supervisors focusing on enhancing these skill sets and bridging the scarcity.

Growing Membership: We intend to significantly increase both corporate and individual memberships, making DFII more representative and impactful. A larger membership base will give us a greater voice in policy discussions, code development, and industry standards. I invite every stakeholder to join us and contribute.

Collaborative Training: We will establish more joint training programs and activities with other professional organizations. These collaborations will help us disseminate the deep foundation engineering knowledge across all

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segments of civil engineering and upskill our workforce at scale, from laboratory technicians to field engineers.

Student Base Decentralization: Our student outreach program, Groundwork, has been well received. While this program continues, I now intend to form strong, decentralized student chapters with an industry targeted mission. Student chapters will conduct local activities, competitions and industry interactions, taking our mission deeper into academic institutions and creating a talent pipeline for the future.

Women in Deep Foundations (WiDF): This initiative is already performing very well, but I intend to take their activities further through the establishment of independent WiDF initiatives in India. We will organize dedicated networking events, mentorship programs and leadership sessions to encourage and empower women professionals across our industry.

I invite all members and stakeholders to be part of this mission by joining DFII committees that align with your interests, promoting our programs, and taking an active part in all DFII initiatives. Whether you are a contractor, consultant, academic, manufacturer, equipment supplier or student, there is a place for you to contribute and grow with us.

I am fully committed to taking the good work of DFII even further with transparency, collaboration and measurable outcomes. Together, let us advance India's deep foundations industry toward global best practices and make a lasting difference in every project, every site and every career we touch.

Thank you once again. I look forward to your support, continued partnership and collective energy.



Women in Deep Foundations (WiDF) India

Student Development Grants 2026

The WiDF India initiative of the DFII has announced the **Student Development Grants 2026** for female students pursuing careers in geotechnical and foundation engineering.

This initiative aims to encourage and support aspiring women professionals by providing opportunities for industry exposure, networking, and recognition. Eligible candidates include final-year undergraduate students and postgraduate (Master's/Doctoral) students in relevant disciplines, with a recommendation from their project or thesis supervisor.

Selected candidates will receive **complimentary registration to the DFI-India 2026 Conference** to be held at IIT Guwahati. September 24–26, 2026, along with a **grant of INR 10,000**. The application deadline is **June 29, 2026**.



For more details and to apply, please visit: dfi-events.org/india26/widf



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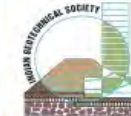
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DFII Workshop on “Sustainability and Carbon Footprint Assessment in Deep Foundations”

The DFI of India, through its Sustainability Committee in collaboration with the India Geotechnical Society (IGS) Delhi Chapter, successfully organized a full-day, in-person workshop on “**Sustainability and Carbon Footprint Assessment in Deep Foundations**” on March 28, 2026, at IIT Delhi.

The program focused on providing hands-on exposure to the EFFC/DFI Carbon Calculator, an Excel-based tool developed to enable standardized and transparent carbon footprint assessment for geotechnical works. Participants gained valuable insights into calculating project carbon footprints, identifying carbon hotspots and supporting data-driven decision making for decarbonization.



The workshop commenced with a welcome address by Dr. Althaf Usmani, Chairman of IGS Delhi Chapter, followed by an introduction to the session scope and the initiatives of the DFII Sustainability Committee by Ms. Geethanjali K from Engineers India Limited. An overview of sustainability in foundations by Prof. G V Ramana from IIT Delhi set the context.

***All photographs shown above were captured during the workshop**

The event featured highly engaging and technically enriching sessions delivered by distinguished experts, including **Dr. Venu Raju**, Professor of Practice at IIT Madras and Senior Advisor, Sustainability at Keller; **Ms. K. Karthikayeni**, Head Team Planet, Keller Asia and **Mr. PVSR Prasad**, Head- Business Development (S&E), Keller India.



The workshop witnessed active participation from more than 50 members, reflecting strong engagement from the geotechnical community including industry professionals, academicians and engineers.



DFI of India extends its sincere gratitude to the speakers, IGS Delhi Chapter and all participants for their valuable contributions in making the workshop a great success.

A Case Study on Soft Soil Improvement Using PVD with Surcharge: Field Monitoring and Numerical Validation

Durgam Mahesh, Sanjoy Bhowmik, and VK Panwar, Engineers India Ltd, New Delhi, India, durgam.mahesh@eil.co.in

Introduction: The Challenge of Coastal Alluvium

Industrial development in coastal and deltaic regions around the world frequently encounter significant geotechnical challenges due to deep deposits of soft, compressible clay. These soils are characterized by low shear strength, high natural water content, and extremely low permeability, leading to long-term settlement issues and low bearing capacity. A prime example is a recent industrial project site located near the Demerara River in South America, where a 17.5-meter-thick layer of very soft clay posed a threat to the serviceability of future infrastructure. The subsoil investigation at this site revealed a challenging stratigraphy (Fig.1): high-plasticity clay with natural water contents exceeding 60% and liquidity indices well above unity. To meet stringent serviceability limits, specifically a post-construction settlement criterion of 25 mm, a robust ground improvement strategy was required to pre-consolidate the soil before structural work began.

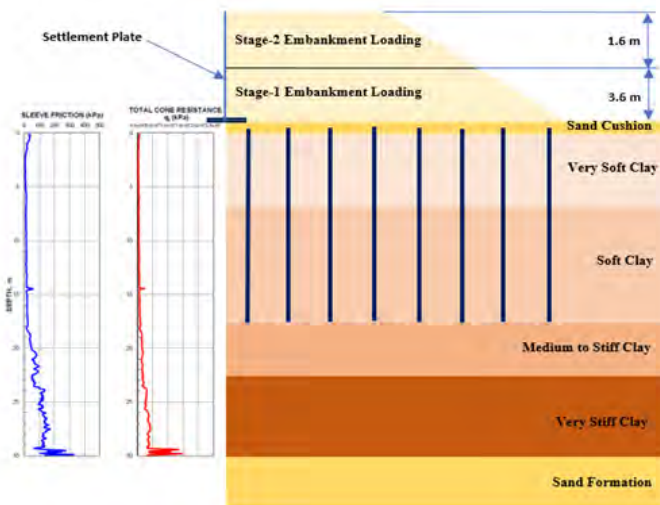


Fig. 1: Conceptual Illustration of PVD Layout and sub-soil characterization

The Strategy: PVD and Surcharge Preloading

The ground improvement scheme utilizing Prefabricated vertical drains (PVD) combined with surcharge preloading was adopted. The primary mechanism of this approach is based on radial consolidation theory, which accelerates the expulsion of pore water by shortening the drainage path. For this project, the design was refined using Hansbo's (1981) approach to account for "smear zones", areas of reduced permeability caused by the drain installation process, and the hydraulic resistance of the drains themselves. The initial design called for PVDs arranged in a 0.9-meter square pattern. The target was to achieve a 95% degree of consolidation within a four-month timeframe. To achieve this, a staged embankment loading process was planned: a 3.6-meter first stage followed by a 1.6-meter second stage.

Bridging the Gap: Field Monitoring and Discrepancies

A critical component of the project was the implementation of a comprehensive instrumentation plan, including settlement plates, vibrating wire piezometers, and inclinometers. These tools provide essential real-time data on the in situ response of the soil, especially since laboratory tests often fail to capture the full complexity of soft soil behavior due to sample disturbance or inherent anisotropy. Early-stage monitoring during the first loading phase revealed a concerning trend (Fig.2): actual field settlements were occurring slower than the theoretical predictions. Rather than proceeding with a potentially conservative design, the monitoring data allowed the project team to initiate a cycle of back-analysis and re-evaluation to optimize the strategy.

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Empirical Revalidation: Asaoka and Tan Methods

To interpret the field data and estimate settlements more reliably, the project team employed two prominent empirical techniques: the Asaoka method (1978) and Tan's hyperbolic method (1995).

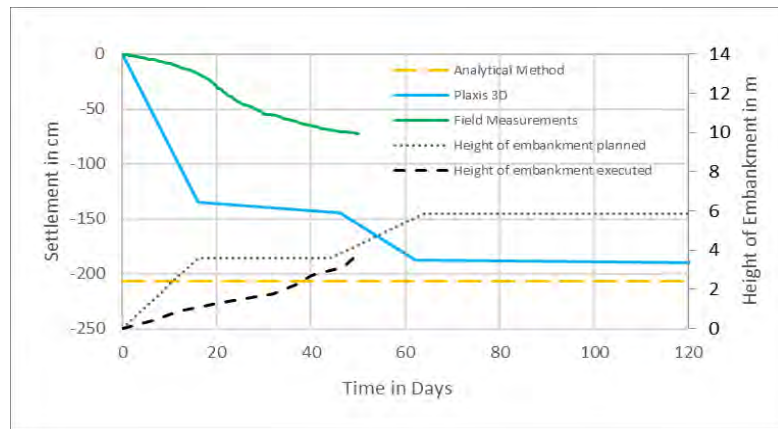


Fig. 2: Comparison of settlements from Field observations and PLAXIS 3D at the end of construction of first stage of embankment

- The Asaoka Method: A graphical procedure that plots settlement at a given time against settlement at a previous interval. By extrapolating the resulting trend line, engineers can estimate the total (primary and secondary) settlement without requiring prior knowledge of specific soil parameters.
- Tan's Hyperbolic Method: This approach builds on the Asaoka method by incorporating time as a parameter, offering a refined estimation of the degree of consolidation at specific intervals.

These analyses confirmed that the initial design parameters were conservative. The back-calculated total settlement was found to be between

1.30m and 1.37m, substantially lower than the original prediction of 2.07m (Fig.3).

Numerical Validation and Safety Optimization

With the revised parameters, the project team utilized PLAXIS 3D numerical modeling to revalidate the design. The model incorporated a soft soil constitutive model to capture time-dependent primary and secondary consolidation. Initial stability analysis for the proposed embankment yielded a factor of safety (FoS) of only 1.03, indicating a high risk of instability. To

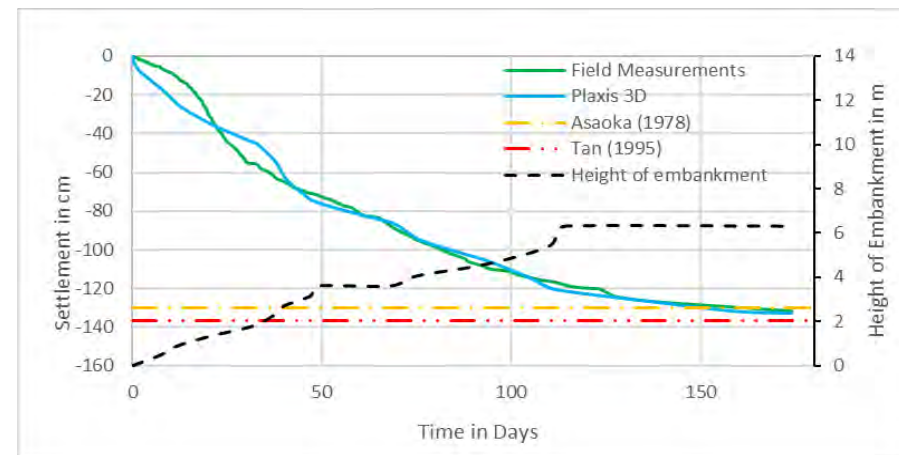


Fig. 3: Comparison of Final settlements from Field observations, Asaoka's method, Tan's Hyperbolic method and PLAXIS 3D

rectify this, a high-strength geogrid reinforcement layer (600 kN/m) was introduced at the interface of the natural ground and the embankment. This reinforcement successfully increased the FoS to 1.35, satisfying the required safety criteria.

Continued

The final design was modified to increase the second-stage embankment height to 2.25 meters and extend the consolidation period to 170 days.

Post-execution monitoring showed that the final field measurements aligned with the updated model predictions within a 5% margin of error, confirming the reliability of the adaptive approach (Fig.4).

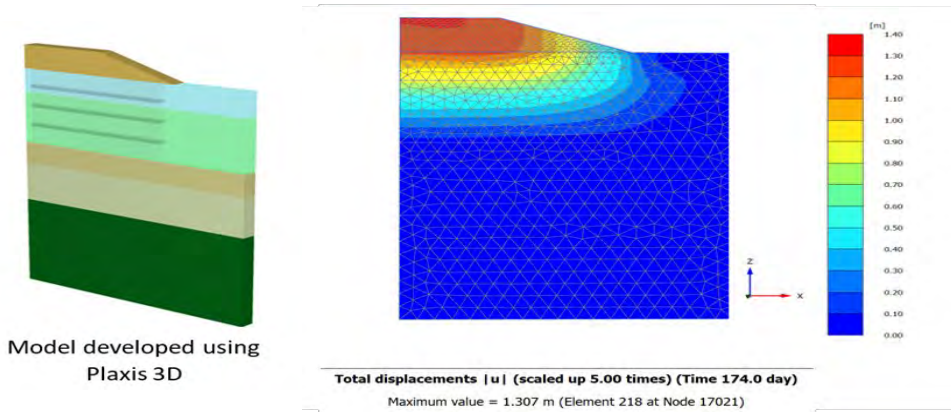


Fig. 4: Numerical Model

Conclusion: Lessons from the Field

This case study underscores the vital importance of integrating field instrumentation with empirical and numerical modeling to improve design accuracy, reduce uncertainty and achieve successful ground improvement outcomes in similar soft soil ground conditions. The success of this project demonstrates that an adaptive management approach is essential for overcoming the challenges of soft ground improvement and ensuring the long-term stability of industrial infrastructure.

The above paper was awarded the best paper award in deep foundation engineering under DFI of India Student Awards 2025.



DFI-India 2026: 15th Annual Conference Date Change Announcement

DFI of India (DFII), in collaboration with the Indian Institute of Technology (IIT) Guwahati and the Indian Geotechnical Society (IGS), Guwahati Chapter, is pleased to announce that the dates for the DFI-India 2026: 15th Annual Conference have been revised to **September 24–26, 2026**.

DFI-India 2026 Conference provides a platform for discussion and knowledge exchange in deep foundation and geotechnical engineering. It brings together professionals from academia, research organizations, consulting and contracting firms, infrastructure developers, equipment manufacturers and policy bodies from India and abroad.

DFII invites all stakeholders to mark their calendars for **DFI-India 2026**

For more information, [visit: dfi-events.org/india26/](https://dfi-events.org/india26/)



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Gowrishankar K R Dharani Geotech Engineers India Pvt Ltd
Sohel Isak Shaikh, S & R Geotechniques Pvt Ltd
Srinivasa Rao Guraja, Saipem India Projects Pvt Ltd
Neelima P, Samgeo Consultants & Constructions
Anand Narasimachar Pujar, Sany Heavy Industry Pvt Ltd
Parthasarathy C R, Sarathy Geotech & Engineering Services
Hari Prasad, Savinaya Infratech Pvt Ltd
Kalpesh Jain, SCM Noble Agencies LLP
Thakor Raya, SCM Noble Agencies LLP
Surajit Basu, SDG Consultants
Punit Kanayalal Bhavnani, Self
Balakumar V, Self Employed Geotechnical Consultant
Tapan L Thakkar, Shivam Concrete Technology Pvt Ltd
Gaurav Kumar, SNF
Manoj Deshpande, Somehsa Geo-Coastal Pvt Ltd
Sivapriya V S, Sri Sivasubramaniya Nadar College of Engineer-
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Ravijeet Ranjan, SVNIT
Sushma B V, Tata Consulting Engineers Ltd
Manos Kumar De, Tata Consulting Engineers Ltd
Mihir Baran Roy, Tata Consulting Engineers Ltd
Pradeep K D Nair, Terraform Geotechnical Services Pvt Ltd
Ankit Bangar, TWF India
Rambabu Tadepalli, UR Ground Engineering Pvt Ltd
Sanskruti M Deshmukh, S & R Geotechniques Pvt Ltd
Sunil S Basarkar, S & R Geotechniques Pvt Ltd
Kunal Mansing Mohite, S & R Geotechniques Pvt Ltd

Bhargav Jog, Dextra India
Vivek Tiwari, Dextra India

Government Individual

Muttharam Madhavan, Anna University
Parvathi G S, CSIR Central Road Research Institute
Palak Jaykumar Shukla, Directorate of Technical
Education, Gujarat.
Geethanjali Koppolu, Engineers India Limited
Abhijit Roy, Engineers India Limited
Purnanand Savoikar, Goa Engineering College
Dasaka Satyanarayana Murty, IIT Bombay
B Umashankar, IIT Hyderabad
Neelima Satyam Devarakonda, IIT Indore
Sumeet Kumar Sinha, IIT Delhi
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Pijush Samui, NIT Patna
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Akshay Sahoo, Works Department, Govt. of Odisha

Experiences at DFI50, Nashville, USA - Mr. Ravikiran Vaidya, Vice Chair, DFII

It gives me great pleasure to write this article about my experiences of attending the 50th Annual DFI Conference held October 20-23, 2025 in Nashville, Tennessee, USA. DFI-USA Conferences have also been attended by Dr. KS Ramakrishna, Er. Anirudhan, Er. Mohan Ramanathan and Dr. Basarkar to name a few. Thus, it was a pleasure to be there in person to also represent DFI of India particularly when DFI-USA was celebrating their 50th year of operations.

The conference is similar to DFI-India conferences but on a much bigger and grander scale. The number of participants exceeded 1300 and there were more than 150 booths. The conference was an excellent mix of contractors, consultants, owner organizations like Federal Highway Administration (FHWA), Departments of Transportation (DOTs) etc., testing companies, academicians and students too.

The events commenced with board meetings which are held one day before the conference. These are detailed, exhaustive and can exceed 6-7 hours. These are typically started with presentations about DFI activities through the year, followed by a presentation of DFI international activities by the international chapters. I was fortunate to make a presentation about DFII's activities for the year as well as future plans and these were definitely well received as per feedbacks and acknowledgements. The meetings then continue through the day with presentations by each sub-committee member on the work done during the entire year and objectives for the subsequent year. Budgets, funding requirements, staff welfare, future planning are all part of the board meetings, and I was impressed to see the commitment, contributions, including the R&D proposals, way ahead. which were discussed during the meeting. The meeting included a working lunch, tea/coffee breaks, followed by evening paid cocktail

dinner which allows everybody to discuss in person and network.

The first day of the conference is normally the committee meetings. DFI USA has 25 committees and working groups which is a large number for a speciality



domain. All these are structured into several halls with each committee debating on a specific task or subject like ground improvement, drilled shafts, sustainability, etc. One can choose the meeting that they intend to attend and be present, hear and contribute to the discussions. The chair of the specific sub-committee may also include the individual in his group if there is a possibility of reasonable contribution from the member. I attended five committee meetings including drilled shafts, foundation reuse, driven piles, testing and evaluation. through the day. It was definitely an exhausting day but was then followed by the Women in Deep Foundations Networking Reception, which was refreshing. The committee meetings generally discuss of geotechnical topics as applied to USA, although there is also some collaboration and joint effort with the European group too.

Continued

Technical articles/presentations of relevance are invited from the readers.
Please prepare the document in MS Word format along with good quality figures and pictures.

The second day is the official inauguration day of the conference and is the most attended. This starts with a prestigious inaugural lecture by a recognized industry legend. The first session also includes lectures by Project Award Winners and Student Competition Winners. These lectures are excellent, innovative and path-breaking with actual data and research. I was happy to note that some of the work presented in the lectures was similar to what we have done in our office. It gave me a satisfaction that we are not far behind in terms of quality data and application. I hope it becomes a mission in India, too, that we debate and generate good quality data and, in the process, ensure that our structures and foundations are much more long lasting than ever before.



The second half of the day was devoted to parallel sessions. Unlike in India, where parallel sessions are deemed to be allotted to less important presentations, the lectures are nicely planned and are well attended by the participants. These are also high quality lectures and I kept shuffling between halls trying to do justice to myself as I did not want to miss anything as much as possible. The second day ended with the Welcome Reception for all the delegates.

The third day of the conference is equally electrifying and starts with a well

known speaker who presented on monetary issues rather than engineering or geotechnical applications. It seems this is the current trend as then delegates also get updated on any of the non-engineering major topics as applicable to USA. I, again, noticed the excellent attendance in parallel sessions and that there were no individual plenary sessions for the rest of the day as well as the fourth day which was a half day. Nashville is well known for music, and we were thus taken to a live musical show and distillery where everybody enjoyed music, dance and a wonderful cocktail dinner with food available even for a vegetarian like me.

I observed that in addition to lunches, the networking breaks are spread for at least 45-minutes between sessions which allowed me to visit booths, discuss products, interact with experts and also connect with delegates during the entire event.

To summarize, it was a fantastic event with high quality lectures showing innovation, application and new developments in the field of geotechnics. My experience of the 50th Conference would be incomplete without mentioning the support and encouragement received from Ms. Theresa Engler, Executive Director, DFI - USA, as well as DFII Support Committee Chairs Satyajit (Seth) Vaidya and Lucky Nagarajan. They all ensured that I was comfortable always, introduced me to several people and helped me in every aspect during the four days. The rest of the DFI team, and committee members were welcoming too. I would also like to thank DFI of India board for accepting me to represent DFI of India at the meetings and events. Thanks also to the DFI Office team of Pranav Jha and Sai Sindhu in preparing the annual report and presentations which I could then present during the meetings. I am happy to share a couple of pictures of the event.

To also acknowledge that as I take over the post of Vice-Chair of DFI of India, I look forward to contributing to DFI activities through my term with all your support and wishes.

Technical photo features of relevance are invited from the readers. Each feature shall preferably illustrate a modern technology or testing procedure. Please prepare your feature with six to eight good quality pictures with brief description.

DFI of India Groundwork Series 2026 - Session 2

DFI of India successfully conducted the second session of the DFI of India Groundwork Series 2026 on April 11, 2026, as an in-person event in association with Sardar Patel College of Engineering, Mumbai. The event was conducted under the DFII Students' Outreach – Groundwork Committee, continuing the momentum of this year's Groundwork Series.

The session featured a technical lecture by Dr. Rohan Deshmukh (Bentley Systems) on "Numerical Modelling of Shallow and Deep Foundations Using PLAXIS." The lecture provided valuable insights into numerical modelling techniques and their practical applications in geotechnical engineering, leading to engaging discussions among the participants.

More sessions are planned under the DFII Students Outreach Groundwork Series, both in-person and online, to continue fostering learning and engagement among students.



DFII & DFI Upcoming Events

Event	Date	Venue
DFI-PFSF Piling & Ground Improvement Conference	May 18-20, 2026	Sydney, Australia
SuperPile '26	June 24-26, 2026	New Orleans, Louisiana
S3 2026	Aug 11-13, 2026	Charlotte, North Carolina
DFI-India 2026	Sept 24-26, 2026	Guwahati, India
DFI51	Nov 2-5, 2026	Orlando, Florida
7th International Conference on Grouting and Deep Mixing	Mar 17 – 19, 2027	Florence, Italy
IFCEE 2027	May 11–14, 2027	Grapevine, Texas

[Continued from page 4](#)

The HSDT is an energy-based procedure, and since the test is done a few days after static loading, the pre-loading effect from initial static loading is relatively limited. However, if the pile has failed in the first static load test, then conducting a high-strain dynamic load test on the same pile may not be useful.

In the current case study, a 1m-diameter pile 38m long was installed in sandy silt. A 22T hammer was used to test the pile with a series of blows ranging from 0.5m to 3m. In the current case, all blows from HSDT field measurements were subjected to wave matching analysis, and an envelope was plotted for comparison with the static load test results. This was done to envisage pile behaviour under multiple cycles of loading, and since the pile did not show significant set under the first few individual blows.

Figure 2 compares test results from static and high-strain dynamic testing. As shown, the results were consistent, indicating that the parameters were appropriately selected during wave matching analysis. Correlation studies are important to validate pile behaviour across a variety of soils and to verify the expertise, as mistakes in either case can lead to serious consequences for the project. Further comparisons between friction from HSDT and friction computed using static formulae was also made with success.

With inputs from Geo Dynamics LLP and SamGeo Consultants & Constructions*

We would like to inform our readers that **IS 1893 (Part 1): 2025**, featured as the cover story in our January 2026 issue, has been withdrawn by the Government of India. This decision has been taken to allow for a detailed review and stakeholder consultation before proceeding further.



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DFI members have free, unlimited access to more than 145,000 technical papers at OneMine.org the Global Digital Research Library for the mining, tunneling and deep foundations construction communities

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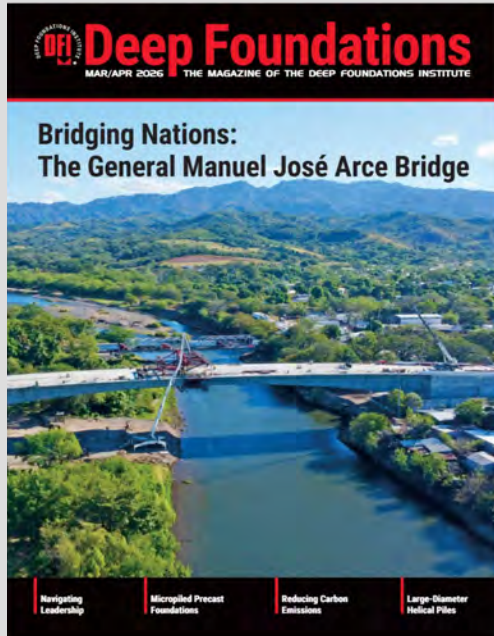
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renew here: dfi.org/members/

Hurry up!!! Join DFI of India today and connect with a network of geotechnical professionals driving innovation in deep foundations.



The latest issue of *Deep Foundations* magazine for Mar-Apr 2026 is out.
Read it here: bit.ly/DF-MarApr-26

Follow DFI of India on social media for updates & announcements



DFI of India Student Awards 2026 Call for Abstracts

DFI of India invites extended abstracts from Master's students and PhD scholars in the field of deep foundations and ground improvement for the Student Awards 2026. The initiative aims to recognize and encourage emerging talent in the industry.

The awards are open to currently enrolled senior-level Master's students and PhD research scholars who are working on projects or these expected to be completed by the end of 2026.

Eligible candidates are required to submit an abstract by **May 25, 2026**. Shortlisted participants will present their work virtually, with final winners to be honored at the DFI-India 2026 Conference at IIT Guwahati on September 26, 2026.

Winners will receive complimentary registration, a certificate and a cash award.

For details and submission: dfi-events.org/india26/student-abstracts



For inquiries, please contact:
Pranav Jha, Manager - Operations, DFI of India
E-mail: activities@dfi-india.org

WHAT CAN DFI DO FOR YOU?

Overview

DFI is an international association whose members are geoprofessionals involved in the design and construction of deep foundations, excavations and tunneling. These project owners, general and specialty contractors, consulting and design engineers, equipment and material manufacturers and suppliers, educators and students gather at conferences, seminars and in committee meetings to network, educate, communicate and collaborate. In these forums they work together to share knowledge and improve the design and construction of projects with complex geotechnical conditions.

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 25 plus active Technical Committees, Regional Chapters or a DFI group
- Gain visibility with a corporate member listing on the DFI website, which has more than 20,000 views each month
- Connect and communicate with industry peers through social media such as DFI's LinkedIn Groups or follow DFI on LinkedIn, Facebook, Instagram or YouTube
- Access OneMine.org and download up to 145,000 articles, technical papers and books from DFI and organizations all over the world - at no cost



51st Annual Conference on Deep Foundations

November 2-5, 2026

DFI's 51st Annual Conference on Deep Foundations will be held **November 2-5, 2026, in Orlando, Florida**. The theme of this international conference is "*Sea Level Impacts: Navigating Challenges Together*," focusing on the complex challenges and far-reaching implications of rising sea levels. The conference will explore advancements in industry practices, innovative techniques and project delivery through expert perspectives, case studies and research-based papers and presentations. Participants will have the opportunity to engage with global experts, exchange ideas and gain practical insights that can shape the future of foundation engineering.

Registration is open for the Conference. **For more details and registration, visit:** dfi-events.org/dfi51/

This eNewsletter of DFI of India is available at DFI of India website: dfi.org/india/

Editorial Team: Anirudhan I. V., Matthew Glisson, Pranav Jha and Aswin V Hari

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