ICON

ICON ENGINEERING SERVICES LTD.

"Deals Soil & Foundation"

PROFILE

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ICON ENGINEERING SERVICES LTD.

“Deals Soil & Foundation”

CONTENTS

CONTACTS

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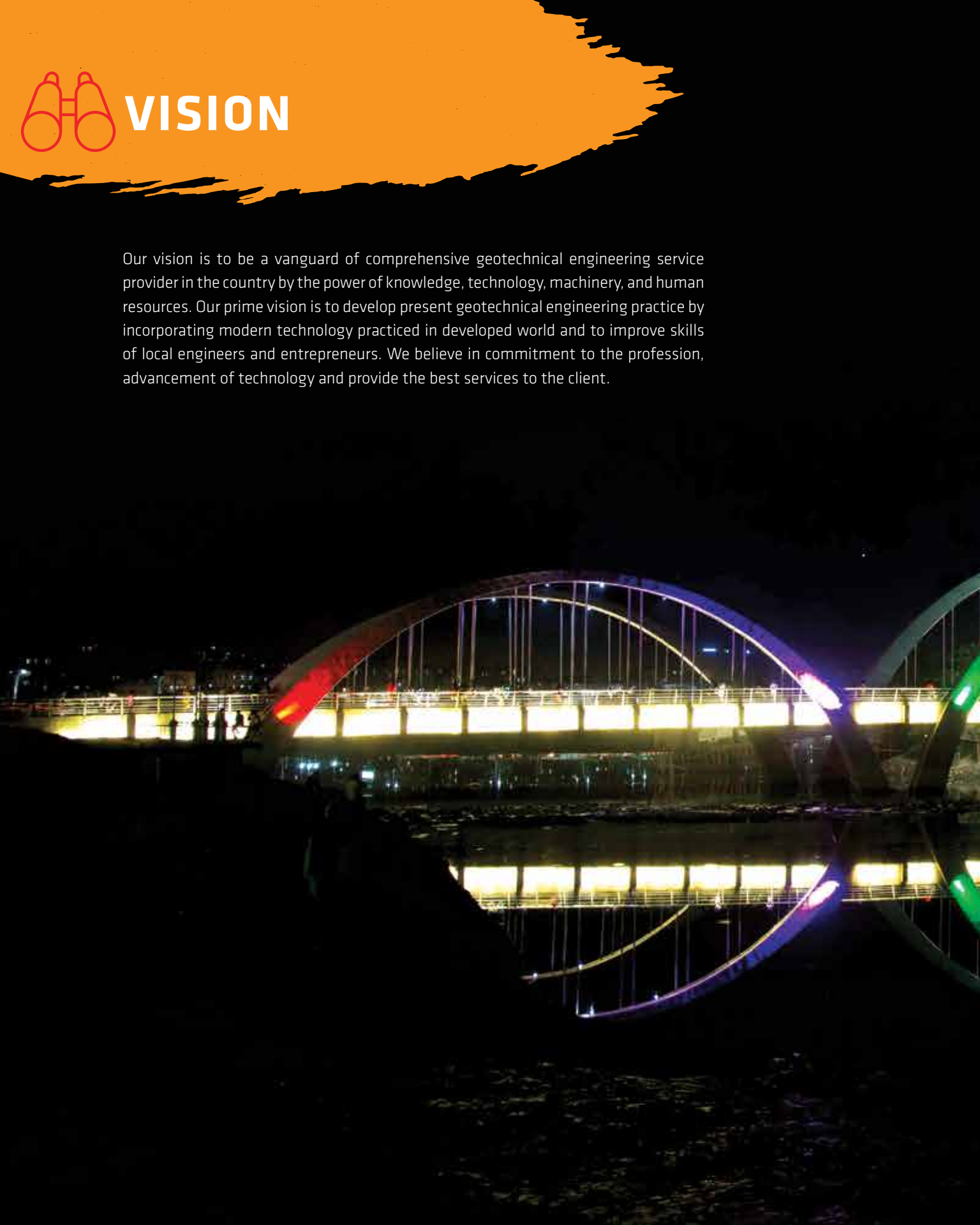
VISION

Our vision is to be a vanguard of comprehensive geotechnical engineering service provider in the country by the power of knowledge, technology, machinery, and human resources. Our prime vision is to develop present geotechnical engineering practice by incorporating modern technology practiced in developed world and to improve skills of local engineers and entrepreneurs. We believe in commitment to the profession, advancement of technology and provide the best services to the client.



PHILOSOPHY & MISSION

Long back, in mid-fifties of last century, geotechnical engineering services i.e. soil investigation and bored pile construction have been introduced in the then East Pakistan under the entrepreneurship of Swiss Boring, later, the company switched over to Soiltech International Ltd in the year of 1971, just after the independence of the country. Other than Soiltech International Ltd, few other companies grew under the leadership of local engineers, and started practicing geotechnical engineering in real life project. But work volume failed to attract others to this profession.

Over time, the economy of the country gained momentum and development work volume amplified but this specialized geotechnical engineering did not move forward, rather, we want to say, quality and services declined. Non-professionals dominated the industry and in most cases people took it simply as business. Now it's time to set a new benchmark and set on our missions to:

- Incorporate updated technology.
- Procure modern equipment and instrument.
- Improve skills of local engineers and entrepreneurs.
- Develop human resources.

Construction of 1200 Ø Depth - 32m, Nos - 86 bored RC pile for Bridge 01, Hatirjheel Integrated Development project.

Membership and certification

Member:	**Bangladesh Association of Construction Industry (BACI)**
	House no: 43 (level-4), road no: 27,
	Dhanmondi, Dhaka-1209, Bangladesh.
	Pile Driving Contractors Association (PDCA)
	Association office, suite 3, First Floor, 7-11 railway
	St Baulkham Hills 2153, New South Wales Australia.
Certification:	**ISO 9001:2015**
	TNV Certification UK Ltd.
	Armstrong House, First Avenue, Robin Hood Airport, Doncaster, South Yorkshire,
	England, Dn9 3GA, United Kingdom.
Proficiency:	**PILE DYNAMICS INC (PDI)**
	30725 Aurora Road Cleveland, Ohio 44139 USA.

Credit Rating

PDCA Membership Certificate

ISO Certificate

BACI Membership Certificate

History

Setting Up: 1991- 1997

Icon Engineering Services Ltd. launched late in 1991 by Engr. Abu Mohammed Masud, without any Financial investment and without any employee on the payroll. It initiated with a very small geotechnical laboratory setup in a rented garage. In early 1992, Beximco Engineering Ltd awarded a small contract of bored pile work for Rangunia– Hathazaree electrical transmission line at Chittagong. That was the beginning and later in the following years IES did many small diameter bored pile construction projects and completed successfully. Few of them are mentioned here- UGC building, laundry building of Hotel Sonergaon, Parishankhyan Bhaban at Agargaon, Twin tower, Concord Grand at Shantinagar, Concord Regency at Panthapath, Golf Heights at Banani, ShundarbanTechnopark at Darussalam etc and many other small building projects.

Decade for Stabilization: 1998- 2006

At the onset, IES faced a lot of troubles due to faulty workmanship of outsourced mechanical work that resulted in huge backlog and idle time. To overcome the crisis, IES set-up one mechanical workshop and started repair and maintenance of their own equipment and machines and IES got new momentum in site works. During this period we have constructed bored pile by conventional method for many prestigious projects having national importance. Among them bored pile for Hatubhanga bridge on Bangshi river at Mirzapore, Crown Cement Ltd at Mukterpur, Dhaka-Sylhet highway under Ircon International Ltd, Hz Shah Paran Bridge on Sylhet bi-pass road, Lafarge Surma Cement plant at Chattak under Lerson & Toubro Ltd, Kin Bridge Sylhet etc and many other projects are notable. During this period IES also started nondestructive pile testing work – PIT, Pile integrity test and PDA, High Strain Dynamic Testing for quality assurance test of pile foundation. Also, procured equipment for high tonnage pile load test work and conducted many pile load test having test load more than 500 ton.

Stage of Development: 2007-2012

In 2007, we had undertaken a large diameter bored pile work for Arch bridge on Gulshan Lake between Banani and Gulshan. Technical specification restricted the rotary boring method to follow. IES have rented one table drive rotary drilling rig for the work but failed to accomplish drilling. As a result, engineers and workers had been humiliated and insulted by the client and consultant. IES took that as a challenge and started brainstorming to develop a machine to accomplish the job. Finally, collected old components from Dholaykhal and assembled in their own workshop to make a drilling machine and finally succeeded and finished the piling work by newly developed rotary boring machine. This is a milestone development of IES which boosted engineers and workers to go ahead.

Presently, Icon Engineering Services Ltd. has a big fleet of construction and successfully used in many prestigious projects of the country like- Hatirjheel integrated development project, Mirpur- airport road flyover, box girder bridge on river Brahmaputra at Gaffargaon, Y-bridge on river Titas at Bancharampur, bridges on Mahananda at Chapai, Gangachara bridge on river Teesta in Rangpur etc.

Another new division started on by procuring new diesel hammers and pile drivers to undertake many projects. Such as the 22,000 Flat construction project of RAJUK. IES procured new diesel hammers from Delmag, and now, have a fleet of diesel hammers ranging from D22 to D46 with pile drivers and are at the top of the list of contractors having the highest number and heaviest diesel hammers and pile drivers.

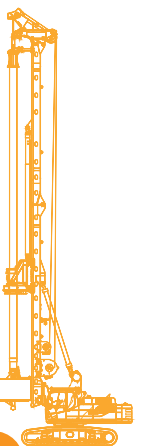
During this time IES have widened and introduced High Strain Dynamic Pile Test by procuring two sets of Pile Driving Analyzers and Pile Integrity Testers from Pile Dynamics Inc, USA and engineers and technicians obtained certification from overseas training and proficiency test from PDCA & PDI. IES procured 2500 ton and 1500 ton test setups and expanded their ability to conduct static pile load test up to 2500 ton. IES also procured half dozen vibrating wire load cells, displacement transducers, 16 channel data logger, readout unit for instrumentation of static pile load test. This is a new horizon and IES became the only service provider for instrumented pile load test.

Advancement with New Technology: 2013 onwards

Since inception, IES always looked forward with a vision to utilize modern machinery and practices essential for geotechnical engineering; and develop human resources on par with the international geotechnical sector. All their focuses are being collectively directed to become a leader of this nation's geotechnical service sector. This has already been achieved and IES has become the only piling and testing contractor in the country, who have introduced: Hydraulic drilling rig for bored cast-in-situ pile; fleet of new diesel hammers; CFA piling; performing static axial load tests using the most sophisticated and precise instruments displacement transducers and load cell; and introducing dynamic testing of piles.

IES have also taken initiatives to modernize the nation's geotechnical investigation sector. At present, IES is the only geotechnical firm to implement the usage of an auto-trip hammer to carry out standard penetration test (SPT) and has developed double tube thin walled vacuum sampler for collection of undisturbed soil samples. In addition, the entire operation is digitally recorded and submitted to our clients. In the process, the quality assurance is also guaranteed. Furthermore, it is also in our intention to introduce internationally accepted CPT; and seismic survey to clearly map out geotechnical features of a particular location.

Icon Engineering Services Ltd. has been established as a proprietorship concern and later incorporated as a limited company and registered in 2015.



CEO & MANAGING DIRECTOR

Abu Mohammed Masud

B.Sc Engg (Civil), FIEB

Engineer Abu Mohammed Masud obtained graduation degree in civil engineering from Rajshahi Engineering College, Rajshahi, Bangladesh and started career as a junior engineer for construction of slipway for Chittagong Port Authority and then joined specialized geotechnical engineering German company, Soiltech International Ltd, pioneer of geotechnical engineering in Bangladesh. During four and half years service in Soiltech International Ltd he himself experienced boring and installation of water wells, construction of bored pile, driven cast-in place pile, geotechnical investigation, pile load testing work done for different project and started career as a geotechnical engineer.

Then, he went abroad and worked in a geotechnical investigation and material testing laboratory in Jeddah, KSA. He was responsible there for doing geotechnical investigation work, asphalt mix design, compaction test, CBR test, Marshall stability and flow test on asphalt concrete, non-destructive concrete testing by using ultra-sonic pulse machine and Schmidt hammer and other routine concrete testing in laboratory.

After returning home he joined DRILLTECH and did ground improvement work such as dynamic consolidation, ground improvement by sand injection, construction of stone column, determination of lateral deformation of soil by using pressure meter, boring and installation of water well for drinking purposes etc. During the period he became experienced in developing equipment for different purposes.

Late in 1991, he started his own business under the name of ICON ENGINEERING SERVICES based only on past experience and personal contact. Construction of bored RC pile, geotechnical investigation, pile load test and driving pre-cast concrete pile works were the main stream of the business at the beginning.

KEY PERSONS

Engr. Md. Golam Fattah

Director

Mr. Golam Fattah graduated in CIVIL Engineering from Rajshahi Engineering College (present RUET) in 1980. Started career with Concord Engineers and Construction Ltd as Junior Engineer. Worked in overseas job in Singapore and Brunie. Served as senior Engineer in Belgium consulting firm Transurb Consult as a cosultant of Parbotipur Railway Workshop (BACKSHOP). Worked as Resident Engineer in Ispahani group. Worked in Real Estate development projects for several years. Working with ICON ENGINEERING SERVICES LTD. as a Director.

Fatin Al Farabee

Director

Fatin holds a Bachelor of Science in Civil Engineering from The University of Asia Pacific, Bangladesh and a Master of Science in Advanced Ground Engineering from University of Surrey, UK.

He started his career in Icon Engineering Services in 2010 as junior engineer, NDT division and upon completion of M. Sc degree he was promoted to Director. As a Geotechnical Engineer, his specialty is deep foundation construction and deep foundation quality assurance. He has vast experience related to deep foundation construction and testing at various mega projects in Bangladesh.

Construction of 1250 Ø & 750 Ø Depth - 52m, Nos- 220 bored RC pile for Gaffargaon-Shaltia bridge at Gaffargaon, Mymensingh.

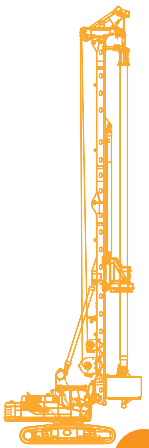
ACTIVITIES

Bored Pile

- Successfully serving the industry since 1991.
- Specialist deep and large diameter bored pile contractor.
- Acquire a huge fleet of core and support equipment.
- Maintaining highly skilled and experienced workforce.

Driven Pile

- Acquire the largest number of driving equipment.
- Drivability analysis and hammer selection using GRLWEAP.
- Pile driving by open-ended single-acting diesel hammer.



QC and QA Tests for Pile

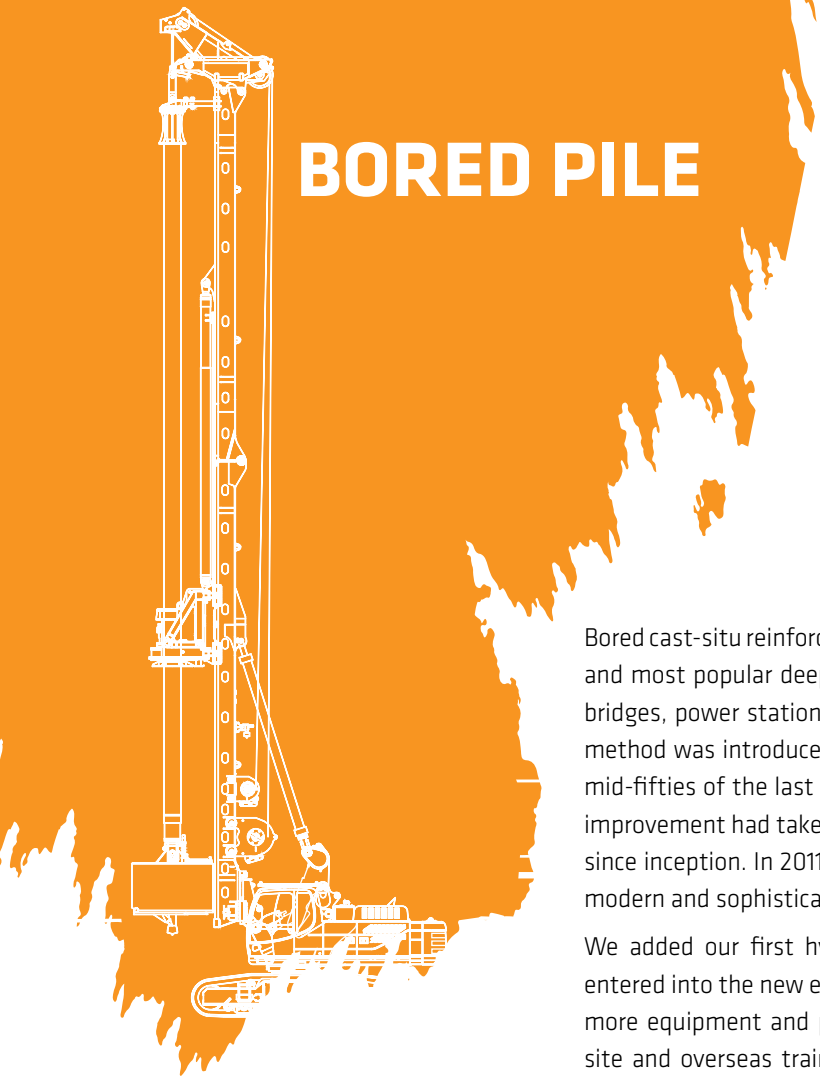
- Cross-hole Sonic Logging.
- Pile IntegrityTest.
- Pile Driving Analysis, PDA.
- CAPWAP analysis.
- Borehole Sonic Measurement using KODEN.

Pile Load Test

- High tonnage static pile load test, up to 3000 MT.
- Static Pile load test by kentledge and anchor method.
- Load measurement by vibrating wire load cell.
- Displacement measurement by displacement transducer.
- Instrumented pile load test.

Geotechnical Investigation

- Offshore and land deep boring.
- SPT and CPT based geotechnical survey.
- Deep soil coring – continuous soil sampling.
- Deep boring by rotary method.
- Soil sampling by piston and Maizer sampler.
- Comprehensive own laboratory, equipped with the most modern software-based instrument support.



BORED PILE

Bored cast-situ reinforced concrete pile installation technology is the foremost and most popular deep foundation construction method for infrastructures, bridges, power stations and buildings. Bored pile construction by percussion method was introduced by a few foreign companies in the country since the mid-fifties of the last century. Unfortunately, no significant advancement or improvement had taken place until the end of the first decade of this century since inception. In 2011, a few general contractors introduced state of the art modern and sophisticated technique for the first time in the country.

We added our first hydraulic drilling rig to the existing fleet in 2013 and entered into the new era of bored pile construction history. Later we procured more equipment and parallelly strengthened our workforce by in-house job site and overseas training. As of today (Jan 2019) we have ten (10) drilling rigs with adequate supporting equipment like; crane, excavator, de-sanding unit, DG, air compressor, transporter etc. and we are now capable to take-up projects of any magnitude.

Rebar cage welding

Bored Pile Resources at a Glance

1. Top head drive hydraulic drilling rig	11 nos
2. Lattice boom crawler crane	11 nos
3. RT Crane	3 nos
4. De-sanding Unit	5 nos
5. Turret base excavator	8 nos
6. Air compressor	9 nos
7. Wheel loader	2 nos
8. Diesel Generator	30 nos

Construction of 750 Ø Depth- 28m Bored RC Pile for 3rd Surma Hazrat Shah Paran Bridge in Sylhet.

Major Bored Pile Projects:

2018-19

- 1500 ϕ 62m deep 532 nos pile for Viaduct of Rail Bridge over Rupsha River at Khulna.
- 1200 ϕ, 1000 ϕ & 600 ϕ max 52m deep 304 nos bored pile for South Park Project (Westin Hotel) at Gulshan-2, Dhaka.
- 1800 ϕ, 1500 ϕ, 1200 ϕ & 1000 ϕ 48m deep 725 nos bored pile for DMRT Line-6, CP 03 & 04.
- 600 ϕ 25m deep 229 nos bored pile for Ware house project, Kaliakoir, Gazaipur.
- 1500 ϕ & 1200 ϕ max 55m deep 661 nos bored pile for Dhaka-Khulna Highway (N8) Improvement Project (Package-I & 13), Faridpur, Dhaka.

2017-18

- 1200 ϕmax 50m deep 250 nosbored pile for Dhaka-Khulna Highway (N8) Improvement Project (Package-11), Dhaka.
- 1200 ϕmax 50m deep 324 nosbored pile for Dhaka-Khulna Highway (N8) Improvement Project (Package-7), Dhaka.
- 1200 ϕmax 53m deep 206 nosbored pile for Abdullapur flyover,Dhaka-Khulna Highway (N8) ImprovementProject, Dhaka.
- 750 ϕmax 26.5m deep 412 nos bored pile for Managing Director House Project,Bashundhara RA, Dhaka.
- 600 ϕ max 18mϕ deep 889 nos bored pile for GPH Ispat Project, Chittagong.
- 750 ϕ &900 ϕ max 36m deep 884 nos bored pile for Bashundhar Oil & Gas Company Ltd Project, Dhaka.

2016-17

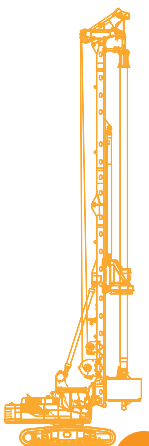
- 600 ϕ Max 28m deep 154nos bored pile for BAT Project, Kushtia
- 1000 ϕ Max 40m deep 284nos bored pile for Bhulta Flyover project
- 1000 ϕ Max 39.5m deep 234nos bored pile for Bridge under SASEC Road Connectivity Project, contract-01
- 1000 ϕ Max 40m deep 652nos bored pile for Flyover, SASEC Road Connectivity Project, Contract-01
- 600 ϕ Max 25.5m deep 111nos bored pile for Kanchpur, Meghna, Gumti 2nd bridges & Rehabilitation of Existing Bridges

2015-16

- 600 ϕ Max 25m deep 338nos bored pile for Bangabandu Satellite Ground Station 1& 2
- 1000 ϕ & 1200 ϕ Max 42m deep 258nos bored pile for Dharala Bridge Project, Kurigram
- 600 ϕ Max 20m deep 1084nos bored pile for Barapukuria Coal Fired Power Station
- 750 ϕ Max 42m deep 299nos bored pile for Bangladesh Navy Dock Yard
- 750 ϕ Max 26m deep 195nos bored pile for Shashanghasa Rail OverpassProject
- 750 ϕ Max 30m& 36m deep 97nos bored pile for Hatirjheel Preservation, Parking & Management unit Building, Dhaka
- 900 ϕ Max 20m deep 54nos bored pile for 2nd Titas railway bridge project
- 750 ϕ Max 22m deep 195noss bored pile for Dhaka Convention Center Project
- 600 ϕ Max 23m deep 60 nos bored pile for Nestle Factory Building Project, Rajendrapur

2014-15

- 1200 ϕ Max 40m deep 238nos bored pile for Padma Multipurpose Bridge Approach Road
- 1000 ϕ Max 28m deep 195nos bored pile for Dhaleshwari Bridge, Tangail
- 1000 ϕ Max 44m deep 331nos bored pile for PGCBHeadOfficeBuilding, Aftabanagar



- 900 ϕ & 1200 ϕ Max 30 & 35m deep 270nos bored pile for Titas Rail Bridge Project

2013-14

- 1000 ϕ & 1200 ϕ Max 43.5m deep 81nos bored pile for Ghangachara Bridge Project, Rangpur
- 1000 ϕ Max 24m deep 78nos bored pile for Khilgaon FlyoverLoop
- 750 ϕ &1000 ϕ Max 32m deep 104nos bored pile for Bridge over Kaliganga River, Manikgonj
- 1000ϕ & 1200 ϕ Max 30 & 35m deep 260nos bored pile for Eastern Bangladesh Bridge Improvement Project

2012-13

- 1000 ϕ Max 52m deep 168nos bored pile for Mahananda Bridge Project, Chapai Nawabgonj
- 1000 ϕ & 1250 ϕ Max 52m deep 426 nos bored pile for Bancharampur Bridge Project, Comilla

2011-12

- 750 ϕ & 1250 ϕ Max 52m deep 220nos bored pile for Goffargaon-Shaltia Bridge Project, Mymensingh
- 750 ϕ & 1000 ϕ Max 40m deep 227nos bored pile for Mirpur-Airport Road Flyover
- 600 ϕ Max 25m deep 166nos bored pile for ACME laboratory building Dhamrai, Dhaka

2010-11

- 750 ϕ &900 ϕ Max 33m deep 110nos bored pile for Bridge Project at Uttara 3rd Phase
- 1000 ϕ Max 28m deep 86nos bored pile for Hatirjheel-Begunbari Khal Intergrade Bridge
- 1000 ϕ Max 28m deep 220nos bored pile for Hatirjheel-Begunbari Khal Intergrade Bridge

2009-10

- 900 ϕ & 1000 ϕ bored pile for Clinker Silo Project for Unique Cement at Meghnaghat

2007-08

- 1000 ϕ bored pile for Kin Bridge Project, Sylhet

2006-07

- 900 ϕ bored pile for Moulvibazar Bridge Project
- 900 ϕ bored pile for Banani - Gulshan Link Bridge
- 1200 ϕ bored pile for Kanaighat Bridge on Surma, Sylhet

2003-04

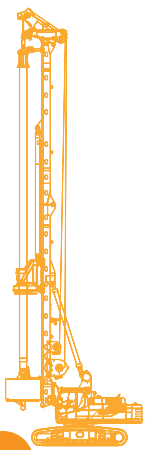
- 750 ϕ bored pile for Shah Poran Bridge Project (3rd) Surma, Sylhet
- 1000ϕ &600 ϕ bored pile for Lafarge Cement Plant, Chattak,Sylhet
- 750 ϕ bored pile for Hatubhdga RC Guarder Bridge, Mirzapore

2002-03

- 900 ϕ bored pile for Dhaka Sylhet Highway

1991-2001

- 800 ϕ bored pile for SRNDP Project, Mawa
- 600 ϕ bored pile for Water Front Project, Dhaka
- 600 ϕ bored pile for MICement Factory Project, Munshigonj
- 750 ϕ bored pile for Hatubangha Bridge Project
- 450 ϕ bored pile for University Grant Commission Building Project
- 450 ϕ bored pile for Hathajari- Rangunia Transmission Line



BORED PILE OWN EQUIPMENT & PROJECT PHOTOS

Bauer BG-26, Germany.

Bauer BG-20H, Germany.

Bauer BG-20H, Germany.

Mait HR-130, Italy.

Soilmec SR-60, Italy.

Soilmec SR-60, Italy.

Soilmec SR-40, Italy.

Mait HR-180, Italy.

Soilmec SR-30, Italy.

Sany SCC750A, China.

Sany SCC600 E, China.

Sumitomo SCX400, Japan.

Sumitomo SCX550E, Japan.

Kobelco BM 500, Japan.

Kobelco, Model 7035, Japan.

Kobelco, Model 7045, Japan.

Sumitomo, Model SC 500-2.

Sany, SCC 550 E.

Excavator, Caterpillar 320D.

Excavator, Caterpillar 320C.

Excavator, Caterpillar 320C.

Excavator, PC200-8LC Komatsu.

Payloader, LiuGong 835, China.

Excavator, CAT 320 D.

Rebar Cage Welding.

Rough Terrain Crane.

Rough Terrain Crane.

De-sander, Bauer, Model BE 100L, Germany.

Vibratory hammer model ICE 1423C, Netherlands.

De-sander, Soilmec, Model SMD 150, Italy.

Sand Content Testing.

Viscosity Testing of slurry.

Shifting rebar cage by crawler crane.

CFA Boring, Ashugonj Power Plant, Soilmec SR30.

Construction of 1200 ϕ bored pile for Tegharia Interchange on N8 Project.

Construction of 1500 ϕ bored pile work for Rupsha Rail Bridge viaduct on Khulna - Mongla Rail Link Project.

Construction of 1800 ϕ bored pile for DMRT Line–6, Cp–04, Mirpur–10.

Construction of 600 ϕ, 1000 ϕ & 1200m ϕ Depth- 28m, 37m, 52m, Nos- 305 bored RC pile for South Park (Westin Hotel, Dhaka), Gulshan, Dhaka.

Construction of 1000 ϕ Depth- 44m, Nos- 408 bored RC pile for First Elevated Expressway, Dhaka.

Construction of 1000 ϕ, 1200 Ø, 1500 ϕ & 2200 ϕ Depth- 35m bored RC pile for DMRT Line-6, CP-05.

Construction of 600 ϕ Depth- 24m, Nos- 1085 bored RC pile for 275 MW Coal fired power plant at Barapukuria, Dinajpur.

Construction of 600 ϕ Depth- 24m, Nos- 121 bored RC pile for Meghna bridge under Kanchpur, Meghna, Gumti 2nd bridge Rehabilitation of existing bridge project.

Construction of 600 Ø Depth- 30m, Nos- 254 bored RC pile for 450 MW combined cycle power plant (north), Ashugonj.

Construction of 1000 Ø & 800 Ø Depth- 44m, Nos- 408 bored RC pile for First Dhaka Elevated Expressway.

Construction of 600 Ø Depth- 24m, Nos- 1085 bored RC pile for 275 MW Coal Fired Power Plant Barapukuria.

Construction of 1000 Ø Depth-48m, Nos- 331 bored RC pile for PGCB Head Office Building, Aftabnagar, Dhaka.

Construction of 900 Ø Depth-26m bored RC pile for Bridge No-4, Hatirjheel Integrated Development Project, Dhaka.

Construction of 900 Ø Depth-30m bored RC pile for Banani-Gulshan link bridge LGED on Banani-Gulshan road, Dhaka.

Construction of 1000 Ø Depth- 43m bored RC pile for Mirpur-Airport Road & Overpass at Banani Rail Corssing (part-1).

Construction of 1000 Ø Depth- 45m bored RC pile for Mohanondha Bridge, Chapai Nawabgonj.

Construction of 600 Ø Depth- 28m, Nos- 154 bored RC pile for British American Tobacco, Kushtia.

Construction of 750 Ø bored RC pile for Overpass-02, Hatirjheel Integrated Development Project Dhaka.

Construction of 1200 Ø bored RC pile for Bridge no-10, 3rd phase of Uttara Model Town.

Pouring Concrete.

Rebar cage installation with the help of crane.

Desanding Unit at BAT, Kushtia.

Mud management.

Drilling tool repairing.

Inside of a Crane.

Spiral Fabrication.

U-clip for Cage making.

Cage Storing.

2200 ϕ pile Cage.

OPERATOR TRAINING CERTIFICATES FOR DRILLING RIGS

DRIVEN CONCRETE PILE

Timber trunks were used as foundation piles in ancient times but, with time, steel and concrete took over as the preferred materials. Driven pile technology was first introduced in Bangladesh for the first sea port in Chittagong. Large steam and pneumatic hammers were used in that project. But after the independence of Bangladesh in 1971, the technology did not moved forward.

Currently, Public Works Department and other government and private organizations emphasise the use of concrete pre-cast driven piles for building foundations. Considering the market demand, IES procured numbers of new and refurbished open end diesel hammers and pile drivers. At the moment, IES has a fleet of diesel hammer based pile drivers and skilled workers.

IES, also equipped sophisticated software GRL WEAP for drivability analysis and automatic hammer blow counter E-Saximeter of Pile Dynamics Inc, USA. Drivability analysis and hammer performance test enable piling contractor to select the most appropriate hammer for driving piles.

Major Pile Driving Equipment:

1.	Single acting diesel hammer	13 nos
2.	Skid mounted Pile driver	07 nos
3.	Footstep hydraulic pile driver	02 nos

Major Driven Pile Projects:

2018-19

- 350mm X 350mm maximum 27.4m Length 4539nos Precast Driven piles for Housing project of UHA at kalshi, Dhaka.
- 350mm X 350mm maximum 23.5m Length 3488nos Precast Driven piles for Construction and driving work at Shuvopur, Feni.

2017-18

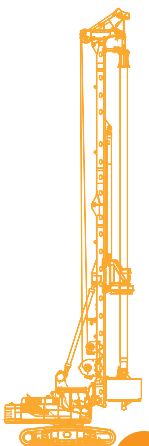
- 400mm X 400mm maximum 14.2m Length 1824nos Precast Driven piles for Bhasundhara Oil and Gas Company Limited.
- 400mm X 400mm maximum 15.2m Length 6489nos Precast Driven piles for Ruppur Nuclear Power Plant.
- 300mm X 300mm maximum 25.0m Length 656nos Precast Driven piles for Chief Judicial Court at Kishorgonj Zila.

2016-17

- 350mm X 350mm maximum 15.2m Length 796nos Precast Driven piles for National Housing Authority, Paikpara, Mirpur.
- 350mm X 350mm & 400mm X 400mm maximum 13.5m Length 826nos Precast Driven piles for Mosharaf Group.
- 350mm X 350mm maximum 12.2m Length 584nos Precast Driven piles for Garments factory for Pretty Group.
- 350mm X 350mm maximum 22.8m Length 2885nos Precast Driven piles for National Housing Mirpur.

2015-16

- 400mm X 400mm maximum 17.0m Length 128nos Precast Driven piles for Marma Composite Ltd.
- 300mm X 300mm maximum 12.2m Length 851nos Precast Driven piles for Renaissance Barind Ltd.
- 350mm X 350mm maximum 17.0m Length 1152nos Precast Driven piles for United Group.



- 400mm X 400mm maximum 30.0m Length 8784nos Precast Driven piles for Uttara Apartment Project of RAJUK.
- 400mm X 400mm maximum 244m Length 411nos Precast Driven piles for Partex Group.
- 380mm X 380mm maximum 18m Length 446nos Precast Driven piles for Walton Hi-tech Ind.
- 300mm X 300mm maximum 12.0m Length 445nos Precast Driven piles for Abed Holdings Ltd.
- 400mm X 400mm & 350mm X 350mm maximum 25m & 22.87m Length 1685nos Precast Driven piles for Padma Associates and Engg.
- 350mm X 350mm maximum 22.0m Length 1168nos Precast Driven piles for Joint Venture Engineering Ltd. & Starlite Services Ltd.
- 350mm X 350mm maximum 22.0m Length 583nos Precast Driven piles for Kalapani, Mirpur.

2014-15

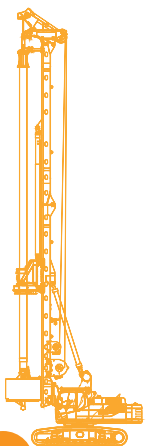
- 400mm X 400mm maximum 27m Length 545nos Precast Driven piles for PBL- MCL Joint Venture.
- 400mm X 400mm maximum 33m Length 2500nos Precast Driven piles for Shahid Sayed Najrul Islam Medical College Hospital.

2013-14

- 350mm X 350mm maximum 18.0m Length 650nos Precast Driven piles for Judicial Complex, Lakshmipur.
- 350mm X 350mm maximum 12.0m Length 310nos Precast Driven piles for 15 storied Building at Sher-e-Bangla Nagar.

2012-13

- 350mm X 350mm maximum 15.0m Length 617nos Precast Driven piles for Baridhara Crown.
- 350mm X 350mm maximum 23.0m Length 200nos Precast Driven piles for Jessore Madical College Hospital.



DRIVEN PILE EQUIPMENT & PROJECT PHOTOS

Footstep hydraulic pile driver model TDJB62B.

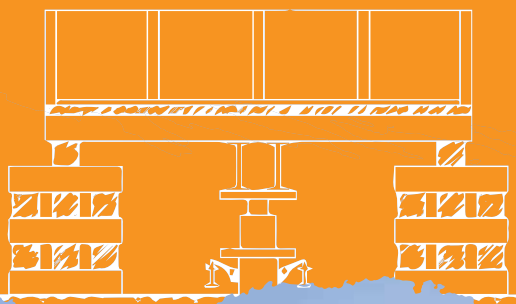
Skid Mounted pile driver.

Uttara Apartment of RAJUK on 400 Square Concrete Driven pile.

Uttara Apartment Project, Dhaka 400mm square, 35m long, Nos-3800 pre-cast pile, D46 diesel hammer in operation.

Lifting of 350mm square 23m long pre-cast concrete pile to check the damage detected by high strain dynamic test of pile.

PILE LOAD TEST



To measure the movement and deformation of pile shaft under load are the main objectives of pile load test. During the early stages, IES started pile load test work, their first job was to conduct pile load test in compression on a pre-cast concrete pile for a bridge at Talma, PS- Boda, District- Panchagar under Local Government Engineering Department. Journey started at Talma with a 60 ton static axial pile load test, presently capable and equipped to conduct very high tonnage load test, up to 3000 ton test. We are now on the top of the list of pile load testing contractor of the country.

Apart from these, IES is now fully equipped with all the latest technology and devices used in industrially and technologically advanced countries. Very recently, IES has introduced instrumented pile load test.

Available Services:

- Pile load test up to **3,000 MT** in compression.
- Pile load test; kentledge method using **concrete block**.
- **Uplift** pile load test.
- **Lateral** pile load test.
- Load measurement by **Load Cell**.
- Settlement measurement by **displacement transducer**.
- Electronic data acquisition by **data logger** and readout unit.
- Pile load test instrumentation; using **strain gauges**.

30000 kN static pile load test, DMRT project line-6, CP-03, at Uttara.

MAJOR LOAD TEST WORKS

2018-19

- 1555 MT ~ 920 MT, 3 nos. Test for DMRT Line-6, CP-05.
- 775 MT Test for Cross Border Road Network Improvement Project (CBRNIP), Package A1 (Kalna Bridge).
- 900 MT Test for Bengal Hotels & Resorts.
- 700 MT Test for Meghna PVC Plant, Meghna.
- 800 MT & 600MT Test for Kalshi flyover Project.
- 790 MT Test for Khulna Mongla Port Rail Line Project.

2017-18

- 600 MT Test for DMRT, Line-6, CP-02.
- 3058 MT ~ 895 MT, 9 nos. Test for DMRT, Line-6, CP-03 & 04.
- 1000 MT ~ 700 MT, 3 nos. Test for Dhaka-Khulna Highway (N8) Improvement Project, Bhanga, Faridpur.

2016-17

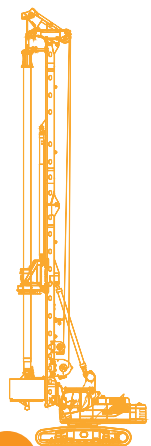
- 1200 MT Test for BRAC University Main Campus, Dhaka.
- 1300 MT Test for VRM Project, Muktepur, Munshigonj.
- 700 MT Test for Drum Storage Warehouse Project, Kaurghat, Chittagong.
- 400 MT Test for Kushiara bridge over the river Kushiara.
- 400 MT Test for Bashundhara oil and gas company.

2015-16

- 600 MT Test for General Pharma Head office building at Uttara, Dhaka.
- 650 MT Test for Mohipal flyover project at Feni.
- 600 MT Test for Construction of 4 lane flyover at Bhulta.
- 510 MT & 500 MT Test for SASEC road connectivity project.
- 630 MT Test for SASEC road connectivity project Contract-1, Konabari, Gazipur.
- 521 MT Test for Dharla Bridge project at Kurigram.
- 500 MT & 644 MT Test for Bangabandhu academy for poverty alleviation & rural development, Gopalgonj.
- 830 MT Test for PGCB Head Office Building.
- 1350 MT Test for Ashugonj 450MW Power plant (North).
- 660 MT, 2 nos. Test for Dhaleshwari Bridge Project, Tangail.
- 850 MT Test for 950m long PC girder bridge at Kurigram.

2014-15

- 500 MT Test for Ghorashal power plant.
- 1340 MT ~ 585 MT, 3 nos. Test for Padma multipurpose bridge project.
- 944 MT Test for Moghbazar Mouchak Flyover Project.
- 640 MT Test for 950m long Pc girder bridge at Kurigram.
- 740 MT & 570 MT Test for Titas railway Bridge project.
- 616 MT Test for 225 MW Power Plant at Khulna.



LOAD TEST EQUIPMENT & PROJECT PHOTOS

Vibrating-wire load cells, data logger, readout unit, strain gauges displacement transducer and accessories (100- 2000ton) GEOKON, USA, 4900.

1000 ton capacity single acting hydraulic jack with spherical seat SUNRUN model CSLS-1000 IL, Taiwan.

Motorized hydraulic power pack, 40 L tank SUNRUN model SPE-2, Taiwan.

Pile Load test DMRT Line-6,
CP-04, 2300 T.

Pile Load test Meghna PVC Ltd.
900 T.

Pile Load test DMRT Line-6,
CP-03, 2300 T.

450 MW combined cycle power
plant (south), Ashuganj 1250 ton
pile load test.

Pile Load test for Swissotel,
Dhaka-900 MT.

Upgradation of Khulna 225 MW combined cycle power
plant, Khulna 600 ton pile load test.

Dhaka-Chittagong Railway development project (DCROP) Track doubling between Laksham-Chinki Astana 700 ton pile load test.

Dhaka Mass Rapid Transit Project CP-02 966 Ton pile load test.

9625kN Static Load Test, Dhaka Mass Rapid Transit (DMRT) Project, Line 06, CP-02.

Bibiyana Expansion Project Vertical pile Load test.

7000kN Static Load Test, Payra Thermal Power Plant (2 x 660 MW).

Khulna-Mongla Railway Project Larsen & Toubro 1350 ton pile load test.

Uplift pile load test.

Lateral Load Test.

Pile load test by kentledge method for rail bridge on Titas river at Akhaura.

HIGH STRAIN DYNAMIC TESTING OF PILE

Estimation of pile capacity by using driving formula was introduced in the early 1940s by prominent engineer Karl Terzaghi. About a decade later EA Smith of Raymond Pile Driving Company developed a numerical method to estimate pile capacity using wave propagation. Dynamic formula have largely been replaced by more accurate wave equation analysis and high strain dynamic testing, although these formulas are still occasionally used in spite of their inaccuracies and the fact that they cannot predict stresses during driving.

Now a days, the PILE DRIVING ANALYZER system (PDA) is the most widely employed system for Dynamic Load Testing and pile driving monitoring worldwide to assess driving stress, capacity of piles, PDA also evaluates resistance profile, skin and toe resistance, Shaft integrity and investigates driving stresses and hammer performance during pile installation.

IES procured two PDA hardware set (PAX-8 & PAX-4) and software and have been practicing since long time. Few of IES engineers also took overseas training to obtain proficiency certificate, please visit www.pdaproficiencytest.com to see proficiency level.

Pile Dynamic Analyzer model PAX-8 and PAX-4 of Pile Dynamics Inc, USA

Smart strain gauges

Accelerometer piezoelectric and piezoresistive

Please visit www.pdaproficiencytest.com to see the list of certified Engineers for PDA Worldwide

PDA hardware set; Data acquisition unit model PAX-8 & PAX-4, with accelerometer, strain gauges and accessories, Pile Dynamic Inc, USA

Engineers' proficiency certificate for high strain dynamic testing of pile

Sensors frame and hammer on pile shaft.

Payra Coal based 1320 MW Thermal power plant high strain dynamic testing of pile.

Strain transducer and accelerometer setting during high strain dynamic testing of pile.

Bridge over Shikolbaha River, Chittagong high strain dynamic testing of pile.

Dhaka-Chittagong Railway Development Project (DCRDP) Track doubling between Laksham and Chinki Astana, high strain dynamic testing of pile.

Moghbazar-Mouchak Flyover 1500 MT PDA Test.

Khulna-Mongla Railway Project, Rupsha Bridge high strain dynamic testing of pile.

Sayed Nazrul Islam Medical College, Kishoregonj high strain dynamic testing of pile work.

Force vs Velocity Graph shown after high strain dynamic testing of pile field work.

Payra Bridge project, Lebukhali, 900 MT PDA Test.

Saidabad water treatment plant phase-II Dhaka high strain dynamic testing of pile.

Janjira approach road & selected bridge facilities ICB: PMB/01 high strain dynamic testing work of pile.

CROSSHOLE SONIC LOGGING

Crosshole sonic logging (CSL) is a method to verify the structural integrity of drilled shafts and other concrete piles. The CSL method is considered to be more accurate than sonic echo testing in the determination of structural soundness of concrete within the drilled shaft inside of the rebar cage. CSL normally requires steel (preferred) or PVC access tubes installed in the drilled shaft and tied to the rebar cage.

After curing a sound source and receiver are lowered, maintaining a consistent elevation between source and sensor. A signal generator generates a sonic pulse from the emitter which is recorded by the sensor. Relative energy, waveform and differential time are recorded, and logged.

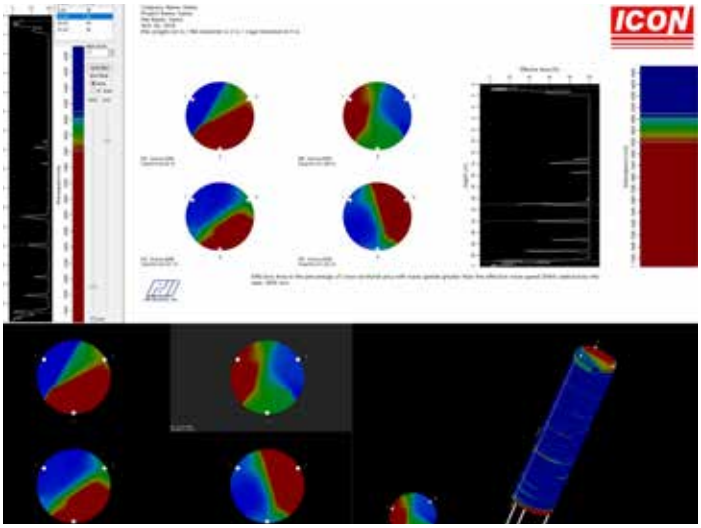
This procedure is repeated at regular intervals throughout the pile and then mapped. By comparing the graphs from the various combinations of access tubes, a qualitative idea of the structural soundness of the concrete throughout the pile can be gleaned.

For advanced analysis of PDI-TOMO software; a 3D tomography tool is used to identify and quantify defects in the pile shaft. Tomography is a mathematical procedure that is applied to Crosshole Sonic Logging data, providing the user with a visual of a shaft's internal defects.

CSL Equipment.

CSL apparatus Model 7074XB, PDI, USA.

Champ-Q and Champ-XV.



2D Slices, 3D illustration and output of PDI-TOMO.

CSL Engineers with Champ-Q.

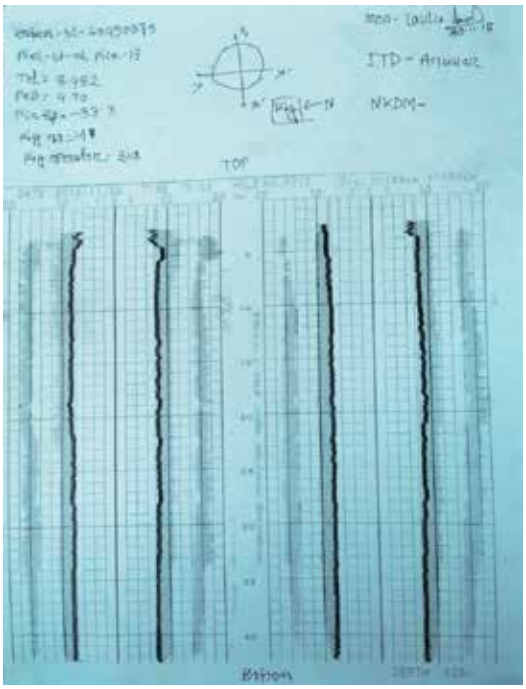
SONIC BOREHOLE MEASUREMENT

Sonic Borehole Measurement (SBM) method applies to measure borehole/ trench dimensions and perpendicularity of drilled shaft for bored pile and diaphragm wall. Test utilize the principle of ultrasonic wave transmission from sensor to the wall of drilled hole and is reflected to the sensore through the bentonite slurry. The machine consists of two unit, one is recorder and another is winch. Recorder unit controls the operation and records the result. On the other hand, winch unit lowers the probe (sensor) down the hole for tha ultrasonic reflection.

Test results are presented in graphical plot and show characteristics below:

- Profile along two perpendicular axes.
- Average verticality of the hole.
- Location or depth where abnormality occurs such as reduction in diameter or collapsed wall of the hole.
- Depth of drilled hole.

SBM test ongoing at Dhaka Mass Rapid Transit. CP-03, at Mirpur, Dhaka.



Borehole calipering by KODEN, Report output.

MAJOR NDT WORKS

High Strain Dynamic Load Test (PDA)

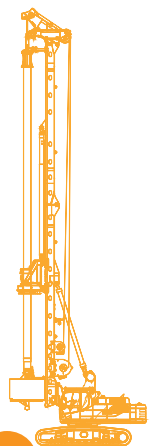
• Bhulta Flyover Project	- 08 nos.	900 ~ 500 MT
• First Dhaka Elevated Expressway Project	- 05 nos.	550 MT
• Payra Thermal Power Plant Project	- 103 nos.	1300 ~ 600 MT
• Payra Bridge Project, Lebukhali	- 32 nos.	450 MT
• Bashundhara Oil & Gas Factory Project	- 30 nos.	400 MT
• Kanchpur Bridge Project	- 03 nos.	450 MT
• Dhaka-Khulna N8 Bridge Project	- 20 nos.	450 MT
• Dhaleshwari Bridge Project	- 06 nos.	700 MT
• Arial Khan Bridge Project	- 06 nos.	300 MT
• Khulna-Mongla Rail Bridge Project over Rupsha river	- 29 nos.	855 MT
• Abdullahpur Flyover Project.	- 04 nos.	450 MT
• 220 MW Gas/212 MW HSD combined Cycle Power Plant, Bhola	- 16 nos.	70 MT
• Borhanuddin Power Plant project	- 110 nos.	250 MT

Crosshole Sonic Logging Test (CSL)

• Shah Cement Factory VRM Project	- 30 nos.
• Payra Thermal Power Plant Project for NEPC	- 50 nos.
• Dhaleshwari Bridge Project for Max-Ranking JV	- 5 nos.
• Abdullahpur Flyover Project for CCECC	- 5 nos.
• Dhaka-Khulna N8 Project for Spectra Engineers LTD	- 30 nos.
• Kanchpur Bridge Project KMG for Mir Akhter Hossain LTD	- 5 nos.
• DMRT Line-6, CP-03 & 04 for ITD	- 1252 nos.
• Akhaura-Laksham Double Line Project for Toma Group.	- 20 nos.
• DMRT Line-6, CP-02 for ITD-Synohydro JV	- 270 nos.
• DMRT Line-6, CP-05 for Tekken-AML-Abenikko JV	- 5++ nos.

Sonic Borehole Measurement Test (SBMT)

• DMRT Line-6, CP-02 & 03 for ITD	- 2330 nos



GEOTECHNICAL INVESTIGATION WORK

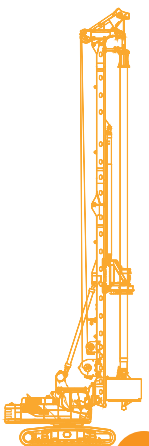
Geotechnical investigations are performed to obtain information on the physical properties of soil and rock at site to design foundations for different structures and for repairing or renovation of distress earthworks and structures. Geotechnical investigation includes subsurface exploration, conducting some field tests and collection of soil samples.

To obtain information about the soil conditions below the surface, some form of subsurface exploration is required.

Methods of observing the soils below the surface, obtaining samples, and determining physical properties of the soils and rocks include test pits, trenching (particularly for locating faults and slide planes), boring, and in situ tests. Reliability and accuracy are the essence of geotechnical investigation. Comprehensive, precise, detail and reliable investigation can reduce construction cost and time. On the other hand, unreliable geotechnical parameters always deceive or betray engineers and entrepreneur.

Unconfined Compressive Test Machine (Digitalized), model VJT5135, VJ Tech, UK.

CPTPush frame, Fox-200+ CPTu, Netherlands.



MAJOR SOIL TEST PROJECTS

(Last 6 years record only)

2018-19

- Western Bangladesh Bridge Improvement Project (WBBIP), North Bengal - 60 nos. Boreholes
- Dhaka Mass Rapid Transit Development Project (DMRT), Line-6, CP-03 & 04 - 100 nos. Boreholes
- Bus Rapid Transit Project(BRT), Airport to Gazipur - 93 nos. Boreholes

2017-18

- River Training Work of Padma Multipurpose Bridge - 8 nos. Boreholes
- Construction of dual gauge double rail line between Akhaura and Laksham - 165 nos. Boreholes

2016-17

- Proposed 150 MW Power Plant at Kodda, Gazipur for Summit Power LTD. - 44 nos. Boreholes
- Nuclear Power Plant, Ruppur, 2nd phase at Pabna - 56 nos. Boreholes
- Chief Judicial Magistrate Court project at Kishoregonj - 96 nos. Boreholes
- Dhaka Mass Rapid Transit Development Project (DMRT), Line-6, CP-02 - 20 nos. Boreholes
- Fouji Chot Cal Ltd. at Ghorashal, Kaligonj - 64 nos. Boreholes
- Bangladesh-Myanmar friendship Road Project - 22 nos. Boreholes
- Kushiara power plant - 26 nos. Boreholes
- SASEC Road Connectivity Project - 25 nos. Boreholes

2015-16

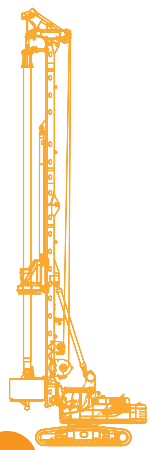
- Western Bangladesh Bridge Improvement Project (EZ-Dhaka zone) - 19 nos. Boreholes
- New Broad Gauge track, Kashiani, Gopalganj - 65 nos. Boreholes
- SASEC Road Connectivity Project, Gazipur, Dhaka - 56 nos. Boreholes
- 4000BBL/Day Capacity Condensate Fractionation Plant, Bahubal, Habiganj, Sylhet - 55 nos. Boreholes
- 275MW power plant, Boropukuria, Dinajpur - 175 nos. Boreholes
- Nuclear Power Plant, Ruppur, Pabna - 52 nos. Boreholes
- Matarbari Ultra super critical Coal fried- Power project, Cox's Bazar - 20 nos. Boreholes

2014-15

- Moghbazar-Mouchak Flyover project - 69 nos. Boreholes
- Lalkhanbazar-Muradpur Flyover project - 49 nos. Boreholes
- Sub-Regional Transport project Preparatory Facility Chittagong-Cox's Bazar-Teknaf Road (225 Km) - 49 nos. Boreholes
- Marine Academy, Rangpur - 50 nos. Boreholes
- Padma Multi-Purpose Bridge, Janjira and Mawa end Approach Road - 125 nos. Boreholes

2013-14

- Sub-Regional Transport project Preparatory Facility Chittagong-Cox's Bazar-Teknaf Road (225 Km) - 149 nos. Boreholes
- Moghbazar- Mouchak Flyover under LGED - 69 nos. Boreholes



Field & Lab Equipmet

Spindle type rotary boring rig, Tone boring TBM-188.

Multi Purpose Drill Rig Super 9M.

Rotary boring rig YBM-2.

Spindle type rotary boring rig.

Rotary boring rig model HGY-200C.

Lab equipment.

Electrical drying oven, ELE UK.

Acons II digitized one dimensional consolidation apparatus, Model VJT0650M, VJ Tech, UK.

Vibratory motorized sieve shaker, SN. 216170221, VJTech, UK.

Piston Sampler(For undisturbed soil sampling), Dando Drilling Int. Ltd., UK.

Mazier 74*52 Triple tube core barrel with plastic tube & cutting shoe by BW.

Torque wrench, Model W0146, Field Vane Shear Test apparatus, Wynn's Tools, China.

Vane, Vane Shear Test.

Direct Shear.

Double tube core barrel including core bit, reaming shell, Barkom, Turkey.

CLIENT

List of Overseas Clients

- China Civil Engineering Construction Corporation (CCECC)|
- Italian-Thai Development Public Company Ltd., Thailand.
- Oriental Consultants Global Co., Ltd, Japan.
- The First Northeast Electric Power Engineering Company (NEPC)
- Long Jian Road & Bridge Co., ltd.
- M/S CCC Engineering Ltd., China.
- Rosatom Group, Russia.
- HIFAB International AB
- Simplex Infra Structure Ltd, India.
- Siam Tone Co., Ltd, Thailand.
- Larsen & Toubro Ltd, India.
- MTHojgaard as, Denmark.
- The TATA Power Company Ltd, India.
- China Geo Engineering Co, China.
- China Harbor Engineering Co, China.
- LTL Global Engineering Services (Pvt.) Limited, Srilanka.
- Shimizu Corporation.
- Japan Weather Association, Japan.
- TRCON International Ltd, India.
- Major Bridge Engineering Company, China.
- Aga Khan Foundation Educational Complex.

Bangladesh Clients

- Navana Construction Ltd.
- Monico Ltd.
- Mir Akhter Hossain Ltd.
- Bangladesh Railway
- Abdul Monem Ltd (AML).
- Islam Trading Consortium Ltd. (ITCL)
- Al-Amin Construction Ltd.
- Wahid Construction Ltd.
- United Group.
- Rangs Group.
- Concord Engineering & Construction Ltd.
- Bangladesh Erectors Ltd.
- Pubali International ltd.
- Square Pharmaceuticals Ltd.
- The ACME Laboratories Ltd.
- MI Cement Factory Ltd.
- Ruby Cement Heidelberg Cement Group.
- Building for Future Ltd. (BFL)
- Hamid Construction Ltd. (HCL)
- Orion Group.
- Spectra Engineers Ltd.
- Bangla Development Corporation (BDC)
- National Civil Engineers.
- MAX Automobiles
- Toma Construction & Co., Ltd.
- Advanced Development Technologies
- M.M Builders & Engineers Ltd.
- Meghna Group of Industries Ltd.
- National Development Engineers Ltd. (NDE)
- Square Consumer Product Ltd.
- Dulal Brothers Ltd.
- Walton Hi-tech Industries Ltd.
- ACI Ltd.
- Local Government Engineering Department (LGED)
- Public Works Department (PWD).
- Roads & Highways Department (RHD)
- Engineering Construction Battalion, Bangladesh Army.
- Bashundhara Group.


ICON

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