



ICI UPDATE

An Electronic-Bulletin from
the Indian Concrete Institute



From the President's Desk

At the outset, I am very distressed to learn the sudden demise of Dr. M. Ramaiah, the founding member and first President of ICI. It was his mission and far-sighted vision that resulted in the formation of ICI. Taking his legacy forward would be best homage to him by the ICI members.

A few months back, the Governing Council of ICI decided to become a member of **fib** (The International Federation of Structural Concrete Switzerland) with the aim of dissemination of latest knowledge pertaining to structural concrete.

ICI team comprising the undersigned, Mr. Vijay Kulkarni & Mr. Jose Kurian - our former presidents had a detailed meeting with Mr. Gordan Clarke, President of **fib** during the course of FIB Congress 2014 held in Mumbai. During the said meeting **fib** President presented **fib** Model Code for Concrete Structure 2010 to ICI. This publication presents new developments and ideas with regard to concrete structures, structural materials and will serve as a basis for future codes for concrete structure as well as an essential document for national and international code committees, practitioners and researchers. As such it gives me pleasure in informing you that ICI is in the process of becoming an associate member of **fib** following our aforesaid meeting with the President of **fib**. There is no gainsaying the fact that this association is definitely a forward looking approach and, above

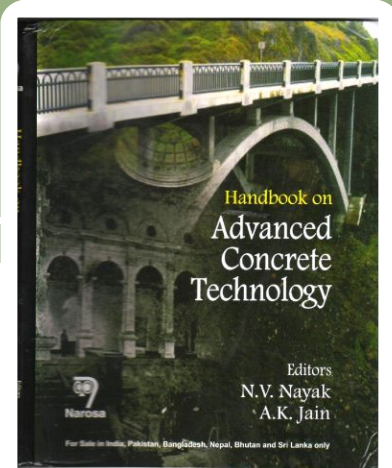
all, a right step in the right direction. Because this tie-up will enable ICI members to have access through our headquarters to "Structural Concrete" journal of **fib** & future publications besides active participation and interaction between **fib** & ICI.

The 12th Five Year Plan of India lays special emphasis on the growth of infrastructure facility wherein concrete being the single largest construction material plays a pivotal role in this endeavour. Against this backdrop, we have got to be in deadly earnest to find an alternative to sand which is one of the vital & essential ingredients of concrete. Moreover, shortage of river sand is a cause for concern in view of river bed erosion on account of no-holds-barred mining of sand.

A one day seminar on "Alternatives to River Sand" conducted by ICI Karnataka-Bengaluru Centre prepared a seminar document. As a follow up action, ICI has already formed a Technical Committee with Prof. Aswath as Convener to prepare a technical document on 'Alternatives to River Sand'. The proposed document is expected to identify different alternative materials and their sources, manufacturing & processing facilities, properties besides advantages and disadvantages relating thereto.

Last but not the least, I sincerely request to all the ICI members for providing inputs to the committee.

Prof. S. Saraswati
President



Hand Book on 'Advanced Concrete Technology' authored by more than 25 Eminent Experts is available at a discounted price of Rs.650/- for ICI members only. Postage extra. Please contact
Ph : 044-24912602 ;
email : ici4@airtelmail.in.

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I request all ICI centres to inform the headquarters about their forthcoming activities well in advance. We have to ensure that there is no overlapping of seminars, workshops and conferences to be organized by different centres.

R. Radhakrishnan
Secretary General

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TAMIL NADU CHENNAI CENTRE:**Workshop on Durability:**

A One-Day Workshop on “Achieving Durable Concrete Construction Through Performance Testing” was conducted on Feb 1st 2014 at IIT Bombay and on Feb 3rd 2014 at IIT Madras, jointly by IITs and ICI. This Workshop addressed the theme of Performance Testing for Durability in Concrete Structures. The focus of the Workshop was to discuss the shortcomings in the current ways of addressing durability in concrete construction, and to introduce the participants to various durability tests methods and their associated transport mechanisms. The Workshop specifically laid emphasis on the need to revamp the environmental classification system for concrete and to move in the long term towards performance specifications for durability. The Mumbai Workshop had 50 participants, while the Chennai Workshop was able to attract almost 100. In both cases, the participants were a good mix of people from Academics (Teachers and Students) and Industry, which includes Cement Manufacturers, Chemical Admixture Companies and RMCs.



Prof. Manu Santhanam Prof. Mark Alexander Er. Vijay R. Kulkarni



Prof. Ravindra Gettu Dr. Radhakrishna G. Pillai Er. B.S. Dhanya

Prof. Mark Alexander from the University of Cape Town, South Africa, set the tone for the discussions in the Workshop with his opening lecture on the use of durability tests for on-site control of concrete. His talk also addressed the current state of practice and how the world concrete industry was shifting gradually to a more performance oriented approach with respect to concrete durability. He also gave a glimpse of the practical application of durability design for concrete that was done in South Africa, with the support of their National Roads Agency.

This was followed by a presentation by Prof. Manu Santhanam from IIT Madras on the current practice in India, and how durability specifications had made some inroads into the large infrastructure projects albeit in an incorrect manner. He also made a case for the revamp of the environmental exposure classifications for concrete, and a new proposal for classification that attempted to reflect the worldwide developments on this issue as well as best practices in the industry was presented. The next talk in the Workshop by Ms. B.S. Dhanya, Ph.D. Scholar from IIT Madras, focused on the transport mechanisms that drove the various durability problems, and how these can be assessed in concrete using appropriate test methods covering chloride, water, and gas penetration into concrete. The talk featured an assessment of the pros and cons of the various test methods. The results of an extensive experimental study carried out at IIT Madras using numerous durability test methods were then discussed, and Prof. Manu Santhanam also showed how the durability data can be used either as standalone tests or as combined tests for a better control of concrete durability in the structure.



Dr. Prakash, IIT Bombay

The next talk by Dr. Radhakrishna Pillai from IIT Madras focused on corrosion process of reinforcing steel in concrete, and how the results from the durability tests could be used in various service life prediction models for RCC. A thorough analysis of the available service life models was also made available in the proceedings. Shri. Vijay Kulkarni from Ready Mix Concrete Manufacturers Association then gave a glimpse of the reality of concrete construction in India, focusing on the extreme variability in cement and concrete properties that made uniform concrete production difficult. He also showed ways in which the quality schemes embraced by the Ready Mix Industry were able to address these issues.

The final talk in the Workshop was presented by Dr. Prakash Nanthagopalan at IIT Bombay,



Group Photo at IIT Bombay

and by Prof. Ravindra Gettu at IIT Madras. While Dr. Prakash talked about durability parameters and performance tests for special concretes, particularly self-compacting concrete, Prof. Gettu talked about the influence of cracking on durability tests, particularly corrosion.

Besides the lectures by experts, the Workshops also saw very healthy discussions among the participants. The Workshop was organized by IIT Madras and IIT Bombay along with Indian Concrete Institute. The proceedings for the Workshop, which included copies of background papers on this subject by the speakers, were sponsored by the Department of Science and Technology, Government of India. All the lectures for the Workshop are downloadable from the website: <http://www.theconcreteportal.com>

ICI - AP HYDERABAD CENTRE:

ACEID - 2014:

With the technical support of ICI-AP Hyderabad Centre and funding by TEQIP II

Vasavi College of Engineering, Hyderabad conducted a Two-Day National Conference on “Advances in Civil Engineering and Infrastructure Development”.



Er. S.P. Anchuri Releasing the Proceedings



Er.S.P. Anchuri



Mr. Ramamohan Rao

This two days Conference was inaugurated on 6th February 2014. Er.Ar. S.P. Anchuri, Chairman ICI-APHC was the Chief Guest & Mr. P. Ramamohan Rao, President, Vasavi Academy of Education was Guest of Honor. Dr. I.V Rao , Principal, VCE, Dr. Sridhar, HOD Civil and Convener Mr. Sharavan Kumar shared the dias. Mr. Sridhar & Mr. Sharavan Kumar addressed the gathering giving information about the civil department of Vasavi College of Engineering, Students Chapter of ICI and about the Conference. In his keynote presentation, Chief Guest Er.Ar. S.P. Anchuri emphasized the role of Civil Engineers in the development of infrastructure and also briefed about the different segments in Civil Engineering. His presentation was very informative and also outlined the opportunities in Civil

Engineering. He also released the Conference Proceedings. More than 47 papers were presented on various themes which included Concrete Structures and Materials, Construction Techniques and Management, Transportation Systems, Water Resource Management, Foundation Techniques, Environmental Facilities, Emerging Technologies in Infrastructure, etc. The response to the Conference was overwhelming. Sri.G.Shraavan Kumar, convener of the event along with his team including Er.Yedukondalu, Secretary, ICI APHC , Mr. Kishore, Jt. Secretary, ICI APHC and Mr. Mavul Rao and other EC Members of ICI APHC, Vasavi College Staff and Students co-ordinated very well to make the event a grand success with the support of Industry especially M/s. UltraTech Cement Ltd.

ICI - KERALA KOCHI CENTRE:

Cricket Tournament 2014:

Soft Ball Cricket Tournament, 2014 was held with great pomp on 26th January 2014, at Govt. Poly Technic College ground, Kalamassery. The Match started at 8 a.m. in the morning and at 9 a.m. a break was taken to view the Republic day flag hoisting and parade by NCC of Govt Polytechnic Kalamasserry. A total of seven Matches were played, which served to improve the camaraderie between the Members. The event was different from last year, as it was a venue for the families of ICI KKC Members to get to know each other. Breakfast, Lunch and Tea was organized for team members, ICI Members and their family who had attended

the get together. Finals were played between India Cements (who defeated last year's champions RMC Readymix) and Neptune Readymix (who defeated last year's runners up UltraTech Cements Ltd). A very close and tense Match was witnessed during the finals and India Cements won the Match by 10 runs.



Flag Hoisting



Man of the Match Award presented by Er. M. A. Joseph, Jt. Secretary, ICI KKC



The ICI Cricket Champions 2014 Team India Cements with the prestigious trophy



ICI - RAJASTHAN CENTRE:**Concrete Day 2013:**

ICI- Rajasthan Centre and UltraTech Cement Limited jointly organized Concrete Day on 19th February 2014 at Jaipur.



Function started with lighting of lamp by Sh. Sudhansh Pant, Chief Guest of the function and Secretary, Mines & Petroleum Dept., Government of Rajasthan, Sh. Naveen Tewari, Executive President (Mktg.), UltraTech Cement, Sh. Shashi Gaggar, Vice President, UltraTech Cement, Sh. Madhu Uttam, Vice President, UltraTech Cement, Dr. Anurag Misra, Chairman, ICI-Rajasthan Centre, Er. Hitesh Mogra, Secretary ICI- Rajasthan Centre and Er. S. Chauhan.



Dr. Anurag Misra welcomed all Members present and shared the significance of Concrete Day and his vision of ICI Rajasthan Centre for next two years. He added that it was 8th year in a row ICI-RSC is celebrating Concrete Day function and every year

participation is increasing. He mentioned that ICI-RSC and Students Chapters are working for the benefit of civil fraternity.



Er. Shashi Gaggar, welcomed Guests and briefed about ICI Awards and their importance.



Keynote speaker of the function Dr. Anurag Misra, Director, Anand International College of Engineering, Jaipur gave very interesting, informative & in depth presentation on "Jaipur Metro Precast Concrete Experience".



All the Jury Members were felicitated by presenting Bouquet & Memento by Sh. Madhu Uttam and Sh. S. Chauhan, Ex-Chairman ICI-RSC.

The Chief Guest Sh. Sudhansh Pant, Sh Naveen Tewari and Sh. Shashi Gaggar announced winners. About 165 Engineers, Architects, Builders & Govt. Officials attended the Function.



ICI-UltraTech Outstanding Concrete Technologist Award went to Er. Mukund Joshi, Chief Engineer, CPWD, Jaipur

In his address, Er. Joshi thanked Indian Concrete Institute and UltraTech Cement for



ICI-UltraTech Outstanding Young Engineer Award was bagged by Er. Sunil Goyal, Jaipur

their efforts in promoting good concrete & construction practices.



ICI-UltraTech Outstanding Concrete Structure Award was presented to Ghat Ki Guni Tunnel Project, Jaipur



Chief Guest of the function Sh. Sudhansh Pant appreciated the initiative taken by ICI-Rajasthan for instituting these awards to encourage all the concrete engineers. He said time has come for engineers to perform and practice world class construction techniques as in India, infrastructure development is the focus point. He requested ICI to conduct more seminars on good construction practices and congratulated all the winners.



Sh. Naveen Tewari in his address said that infrastructure is the measure for development level of any country today.



Er. Hitesh Mogra, Secretary, ICI Rajasthan Centre, proposed vote of thanks. Meeting ended with Dinner.

ICI - UTTARAKHAND CENTRE:

Concrete Day Celebration and Award Function:

Concrete Day was celebrated on 6th Feb 2014 by ICI Uttarakhand Centre jointly with UltraTech Cement Ltd. Shri. B. S. Kaira, Chief Engineer, RES Uttarakhand (Guest of Honor), Sh. Shashi Gaggar, Vice President, Technical Services, UltraTech Cement Ltd., Dr. Achal Kumar Mittal, Chairman, ICI Uttarakhand Centre, Dr. U. K. Sharma, Secretary, ICI Uttarakhand Centre, and Dr. Partha Bhattacharya, UltraTech Cement Ltd. participated. The inaugural address was delivered by Dr. Achal Kumar Mittal, Chairman, ICI wherein he briefed the gathering about ICI and its activities. He also welcomed all the ICI Members present and the Guest of Honor. Dr. Mittal encouraged the Engineers and Architects present to become the members of ICI and to organize more and more technical activities under the banner of ICI Uttarakhand. About 180 ICI Members/Guests participated in the technical event. The participants included Scientists from CSIR-CBRI, Faculty from IIT Roorkee, Engineers from PWD and RES Uttarakhand, Practicing Engineers/ Architects and Students. A technical talk was delivered by Shri. Kaizad, Director Technical, Usthya Infinity Constructions Pvt. Ltd. on “Remedial Engineering”. The message from the Chief Guest, Sh. Dilip Jawalkar (IAS) was read during the function. Prof. V. K. Gupta, Immediate Past Chairman of ICI Uttarakhand and Chairman of the Jury informed the audience about the Jury Members and the different categories of Awards. He also elaborated the procedure followed for evaluation. Dr. A. K. Mittal, Sh. Shashi Gaggar, and Guest of Honor of function announced and presented various awards:

1. “Outstanding Concrete Technologist of the Year-2013 Award” was awarded to Er. Lalit Mohan, Chief Engineer, PWD Uttarakhand.



2. “Life Time Achievement Year-2013 Award” was presented to Dr. Manjit Singh, Rtd. Scientist CSIR-CBRI, Roorkee, Uttarakhand.



3. “Outstanding Concrete Structure of the Year-2013 Award” was handed over to Consultant/Architect : Er. P.K. Chamoli (Designtech Structure Consultant) & Ar. Divesh Nainwal (Architecture Consultant & Contractor M/s. Singhal Engineering, Dehradun.



A View of Audience



Dignitaries on the Dias

Dr. Umesh Sharma, Hon. Secretary proposed vote of thanks.

River Sand Substitutes

- An Overview

Paper presented in the Seminar on "Alternatives to River Sand" conducted by ICI-KBC Centre

Aswath M U

INTRODUCTION

The construction industry is growing with major trust on infrastructure and the demand for sand is also increasing. The overuse of river sand for construction has many undesirable environmental and social consequences. The natural sand deposits are depleting and illegal sand mining is becoming uncontrollable issue. In-stream sand mining has become a common practice and resulted in a mushrooming of river sand mining activities which have given rise to various problems that require urgent action by the authorities. These include river bank erosion, river bed degradation, river buffer zone encroachment and deterioration of river water quality and groundwater availability.

Sand is required for development of the country, but at the same time the threats posed due to sand mining cannot be ignored. Uncontrolled illicit river sand mining creates a level of damage to rivers that are ecologically irreversible even in the long run; an urgent and sustainable solution is now needed for the affected rivers and communities. Hence decisive steps have to be taken and alternate solutions found for sand mining, without disturbing the environment.



Damage to banks and riverbed (Photo Courtesy : Ranjith Ratnayake)



Mechanized mining



Damage to bank, infrastructure and change of river course

(Photo Courtesy : Ranjith Ratnayake)

THE DEMAND AND PROTESTS

As there is huge demand for the sand in the construction industry the river sand resources are depleting. The illegal mining of natural resources is creating major problems. Environmentalists are protesting against mining of these natural resources not only in India but all over the world. The regulating authorities such as The National Green Tribunal, Ministry of Environment and Forests, the State Environment Impact Assessment Authority (SEIAA) and the Pollution control Boards etc are restraining sand mining without any license/permit or environmental clearance from river beds across the country.



Awaaz Foundation and BNHS(Bombay Natural History Society) created awareness against coastal sand mining for the first time in a national or international forum at the UN Convention on Biodiversity, Conference of Parties 11 in Hyderabad India in October 2012



- Take Action to End Global Beach Sand Mining!
- We urge you to become part of the movement by submitting the following petition:
- The petition to end beach sand mining is a non-political effort.

DETRIMENTAL EFFECTS OF BEACH SAND MINING

- Destruction of natural beaches and the ecosystems they protect.
- Loss of habitat for globally important species.
- Increased shoreline erosion rates and reduced protection from natural events; and
- Economic losses from tourist abandonment: Sand mining is currently occurring in 63 countries on 6 continents.

THE ONLY SOLUTION IS TO PREVENT MINING BEFORE IT OCCURS!

Retroactive attempts to rebuild beaches fail to simulate natural conditions.

We do not inherit the Earth from our ancestors, we borrow it from our children.
—Antoine de Saint Exupéry

Photograph © Lana Wong



The NGT served the order to stop mining activities in all states :

Initially, the bench banned illegal sand mining on the beds and banks of rivers Yamuna, Ganga, Hindon, Chambal, Gomti, amongst others, but later modified its order saying the issue of illegally removing sand has nationwide implications.

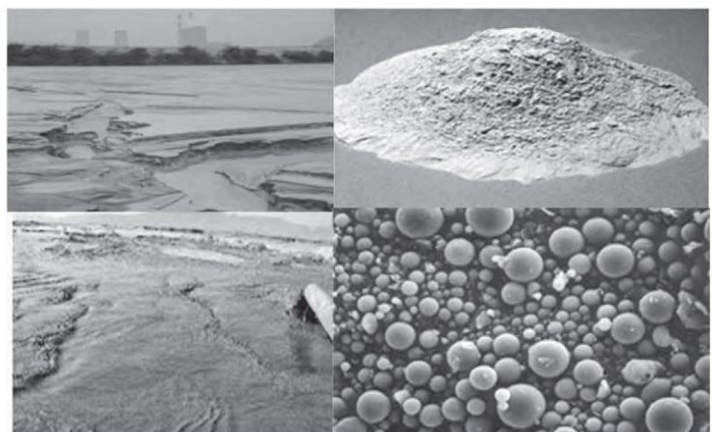
RIVER SAND SUBSTITUTES

Sand Researchers world over are in continuous search for the alternatives to sand. Fine aggregate is one of the important constituents of concrete and mortar in construction industry.. River sand is becoming a scarce material. Sand mining from our rivers has become objectionably excessive. It has now reached a stage where it is killing all our rivers day by day. So sand mining has to be discouraged so as to save the rivers. As natural sand deposits become depleted near some areas of metropolitan growth, the use of alternatives to sands as a replacement fine aggregate in concrete is receiving increased attention. As a solution for this, various alternatives are explored and used in many parts of the world. Some of them are:

- Manufactured Sand(M Sand),
- Processed Quarry Dust,
- Processed Crushed Rock Fines(CRF),
- Offshore Sand,
- Dune Sand,
- Washed Soil (Filtered Sand),
- Fly Ash/ Bottom Ash/Pond Ash
- Slag Sand,
- Copper Slag Sand,
- Construction Demolition Waste,
- Powdered Glass
- Aluminum saw mill waste
- Granite Fines/Slurry and Many More.

FLY ASH/ BOTTOM ASH/POND ASH

Pond ash is the by-product of thermal power plants, which is considered as a waste material and its disposal is a major problem from an environmental point of view and also it requires a lot of disposal areas. There are three types of ash produced by thermal power plants, viz. (1) fly ash, (2) bottom



ash, and (3) pond ash. Fly ash is collected by mechanical or electrostatic precipitators from the flue gases of power plant; whereas, bottom ash is collected from the bottom of the boilers. When these two types of ash, mixed together, are transported in the form of slurry and stored in the lagoons, the deposit is called pond ash. More detailed study papers are available in this document elsewhere.

COPPER SLAG



Addition of slag in concrete increases the density thereby the self weight of the concrete.

- The results of compression & split-tensile test indicated that the strength of concrete increases with respect to the percentage of slag added by weight of fine aggregate up to 40% of additions
- The recommended percentage replacement of sand by copper slag is 40%.
- The studies revealed that the addition of slag does not pave way for leaching of harmful elements like Copper (Cu) and Iron (Fe) present in slag in concrete. Thus, it does not pose any environmental problem.

ALTERNATIVES FOR RIVER SAND: THE POTENTIAL OF OFFSHORE SAND: ^[14]

The overuse of river sand for construction has various undesirable social and ecological consequences. As a solution for this, various alternatives such as offshore sand, quarry dust (or manufactured sand), dune sand and washed soil have been considered. This research focuses on using offshore sand as the most viable alternative for river sand.



The purpose of using offshore sand is because the environmental and ecological impact from extracting the sand from 15 meters below sea level is minuscule. Using beach sand is not a viable solution due to the impacts it has, such as coastal erosion, salt water intrusion into rivers and collapsing of river banks. It has been found that the costs for pumping and dredging will be considerably lower than for river sand. Transportation costs should not exceed that of river sand. With the intention of exploring this new challenge of using offshore sand as a viable replacement for river sand, Prof. Priyan Dias, along with his colleagues Prof. Anura Nanayakkara and Prabath Seneviratna, embarked

on this research. The main objectives were to review the prevailing literature regarding the concept, to characterize the sands by observing the various properties such as the grading, the shell and chloride content while observing the draining and rain effects on the chloride content and finally to study the corrosion performance of the reinforced concrete made using offshore sands.

The literary review revealed that most of the documentation regarding the usage of offshore sand is from UK, whereas some European countries have also recorded the practice. It should be noted that this is different from using sand deposits - which when deployed in the Middle East have

resulted in accelerated corrosion due to the high chloride contents resulting from the long term exposure to salt spray. Also, resorting to methods such as using sea water for batching will increase chloride contents. Hence they are to be avoided at all costs.

The research methodology involved building a 2 meter column of sand and observing the effects of natural drainage and simulated rain. Even as little as 320 mm of simulated rain (the highest average monthly rainfall in Colombo) has reduced the chloride levels well below the acceptable levels. Furthermore, using seawater within the derived acceptable limits has not increased the rate of natural corrosion in concrete with embedded steel. The accelerated-corrosion performance has been impressive, as it was no different to a chloride-free control mixture. On the other hand, using a mixture of seawater saturated sand (i.e. without allowing drainage or natural washing) has resulted in much higher corrosion.

CONCLUSIONS:

- The need of the hour is in striking a balance between growing needs of construction industry and environmental concerns to preserve river beds amid excessive sand mining.
- The government should come out with a policy for sand mining and use of alternatives
- Changing specifications of the Bureau of Indian Standards (BIS) to ensure substitutes of sand can be used by builders across the country.
- Alternatives to sand like m-Sand (manufactured sand), copper slag, powdered glass and recycled construction waste etc which are increasingly being used in many EU nations, Singapore and the US should be encouraged in India.
- Environmentalists across the globe are in favour of such locally viable alternatives.
- Research should be encouraged on durability of concrete with different alternatives.

REFERENCES

1. <http://en.wikipedia.org/wiki/Sand>
2. Singapore's sand shortage "The hourglass effect"- Oct 8th 2009 | SINGAPORE
3. Use of Manufactured Sand in Concrete and Construction an Alternate to River Sand by G. Sreenivasa, General Manager (Business Development), UltraTech Cement Limited, Bangalore
4. VTU e-learning Notes for UNIT-II (Aggregates used for concrete making)
5. Reference manual for field engineers on building construction, Task Force for Quality Assurance in Public Constructions, Govt. of Karnataka
6. IS: 383-1970, [Reaffirmed 1997], Specification for coarse and fine aggregates from natural sources for concrete, Bureau of Indian Standards, New Delhi.
7. Technical data and potential use of fly ash, bottom ash and pond ash of APNRL Plant 2012 RoboSandTM The perfect substitute for river sand -<http://www.robo.co.in/home.htm>
8. POBAS MSAND-<http://www.msand.in/poabmsand.php>
9. Elavenil, S., Nagabhushana Rao, Bh., Radhakrishnan, R and Hariharan, K (2005)"Comparative Study of Steel and Polypropylene Fibre Concrete Plates for Bridges and Roads", Journal of Current Science, Vol.7, No.1, pp. 19-24
10. Elavenil,S,Saravanan.S,Akarsh.M.R,(2012)'Studies on Plastic mixed concrete with Conventional concrete',i-managers Journal on Structural Engineering,Vol.1,N0.2,pp- 11-17
11. Guide to the specification and use of manufactured sand in concrete CCAA – T60 (Cement Concrete and Aggregates AUSTRALIA).
12. Hudson BP – (Manufactured sand for concrete).
13. Nichols, F.P (Manufactured sand and crushed sand in Portland cement concrete INTERNATIONAL, NO. 8, PP 56-63, 1982).
14. Priyan Dias, Anura Nanayakkara and Prabath Seneviratna, "Alternatives for River Sand: the potential of offshore sand", University of Moratuwa, Katubedda, Sri Lanka (10400).
15. Chun-pong Sing , P.E.D. Love , and Chi-ming Tam, "Review and exploration of river sand substitutes for

- concrete production in Asian countries.", Chapter 22. Advances in Civil Engineering and Building Materials, edited by Shuenn-Yih Chang, Suad Khalid Al Bahar, Jingying Zhao, CRC Press,
16. Ranjith Ratnayake , "Unregulated / Illicit River Sand Mining in Sri Lanka- Impact of Awareness Campaign and Legal Recourse"-Experience from some interventions undertaken by the Sri Lanka Water Partnership
 17. D. Brindha and S. Nagan "Utilization of Copper Slag as a Partial Replacement of Fine Aggregate in Concrete" -D., International Journal of Earth Sciences and Engineering, ISSN 0974-5904, Vol. 03, No. 04, August 2010, pp. 579-585

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ANNOUNCEMENT

Formation of ICI Technical Committee on **"ALTERNATIVES TO RIVER SAND" (ICI-TC/07)**

River sand is a widely used construction material all over the world, especially in the production of cement-sand mortar and concrete. Various Government, Non Governmental Organisations and Research Institutes are striving to identify alternative materials to supplement river sand. There is a strong need for research on sand substitutes for cement sand mortar and concrete production. The research should aim to identify suitable river sand substitutes for practical applications in the local construction industry and also focus on formulating practical solutions for using river sand substitutes. The development of standards / specifications and incorporating in the BIS codes will reduce the pressure on using river sand. The standards and codal specifications will assist to select and use the alternatives by the various stake holders. Quality certification of the alternate aggregates and quality certification of the concrete manufacturing process plays a vital role in ensuring the durability of the concrete.

Recognizing the need of the hour, the Governing Council of Indian Concrete Institute has unanimously decided to formulate a Technical Committee on this topic to bring out a technical document on **"ALTERNATIVES TO RIVER SAND"**.

In this connection, we invite the subject experts and interested members both from academia and industry background to involve actively in the preparation of the document. To facilitate the formation of the committee, kindly forward your profile highlighting the contributions in this field. Members will be chosen on their merit.

Send your profiles to: ici4@airtelmail.in

With a copy to: secgenici@airtelmail.in; aswathmu@yahoo.com

Dr. Aswath M U
Chairman, Technical committee

Er. R. Radhakrishnan
Secretary General-ICI

CONGRATULATIONS !!!



Er. G.S. Angadi

Er. G.S. Angadi (ICI LM No:3099) has been awarded "Eminent Architectural Engineer" Award by Institution of Engineers (India), Kolkata.



Dr. Subramanian

Dr. Subramanian's (ICI LM No: 1775) book on Design of Reinforced Concrete Structures" has won the ACCE(I)-Nagadi Award. This book was reviewed by ICI and the review appeared in Jan 2014 issue of ICI-Update.



HINDUSTAN UNIVERSITY - PADUR

1. Seminar on "Engineering Sustainability"

A Seminar on "Engineering Sustainability" was conducted on 7th February 2014 at Hindustan University, Padur. The Seminar was organized by the Department of Civil Engineering. Dr. Jessy Rooby, HOD, Department of Civil Engineering delivered the welcome address and introduced the Guest Speaker Dr. Jonathan Bridge, Environmental Engineering Scientist, University of Liverpool, who explained the need of sustainability in Engineering from UK perspective. He pointed out that we should meet the needs of present

generation without compromising the ability of future generation to meet their own needs. He showed a video of structures from all over the world which were constructed without considering sustainability. He also highlighted the various opportunities available for students for higher studies in University of Liverpool. The lecture was well received and ended with a lively interaction. Under Graduate and Post Graduate students attended the seminar.



2. Seminar on "Innovative Construction Materials":

A Seminar on "Innovative Construction Materials" was conducted on 29th February 2014 at Hindustan University, Padur. The Seminar was organized by the Department of Civil Engineering. Dr. G.Indu Siva Ranjani, Department of Civil Engineering delivered the welcome address and introduced the Guest Speaker Dr. Rahima Shabeen, Assistant Professor, College of Engineering Guindy, Anna University. She in her video lecture

explained the manufacture and application of different type of composite materials. She highlighted that the major limiting factor for the application of composites is the Engineering Unfamiliarity. The lecture was well received by the students. The Under Graduate and Post Graduate students attended the seminar.

The lecture ended up with effective interaction.



Dr. Rahima Shabeen



SRM UNIVERSITY, RAMAPURAM CAMPUS:

1. Technical Lecture on Sustainable Development in Structural Engineering:

Dr. Jonathan Bridge, basically an Environmental Engineer currently with the School of Engineering in University of Liverpool, UK visited SRM University on 6th February 2014 to inculcate sense of sustainable development to the aspiring Civil Engineers. His brief lecture on sustainable development was very informative and enlightening. Dr. Jonathan quoted that the greatest shortcoming of the human race is our



Dr. Jonathan Bridge

inability to understand the exponential function. He added that Sustainable Development is the important demand of today's era especially in under developed and developing countries. Earlier, Dr.T.Ch.Madhavi, Professor and HOD/Civil Engineering welcomed the Chief Guest and gave a brief introduction of the Speaker. Dr.Antony Michael Raj, Vice Principal, presided over the session.



Dr.T.Ch.Madhavi honouring the Speaker with a Memento

2. Guest Lecture :

ICI Chapter of Department of Civil Engineering, SRM University, Ramapuram campus organized on 7th Feb 2014, an invited lecture on "Carbon Management" by Robert Nicholas, Managing Director, Carbon Training International, Sydney, Australia. Mr. Robert Nicholas was accompanied by Glenn Davison, Director and Sabesan Manickvasagam, CTI. Dr.T.Ch.Madhavi, Professor and Head of the Department of Civil Engineering welcomed the gathering and introduced the Speaker. Mr.Robert Nicholas gave a lecture on Carbon Management. He elaborated on the Green house gases like, Carbon dioxide, Methane, CFC's, Nitrous oxide, Water vapour, Ozone, Hydro fluoro carbons etc., which contribute to global warming and then explained about Carbon

Management. His lecture enlightened the participants on ways of carbon management. Mr. Glenn Davison enlightened the audience on proceedings of 'Carbon Training International'. The lecture was beneficial to gain specific knowledge on Carbon Management. Mr.Sabesan gave useful information on carbon accounting.



Mr. Robert Nicholas addressing the students



Faculty and students of Dept of Civil Engineering with the team from CTI, Australia



Director giving away Memento to Mr. Glenn Davidson



Dean giving away Memento to Mr. Robert Nicholas



Vice Principal, Honoring Mr. Sabesan

3. Technical Event:

ICI Chapter and Tech Club of SRM University, Ramapuram organized an event called Mind sweeper on September 4th, 2013, to test the Technical and General aptitude of the students, which swept the minds of the participants from various disciplines, divided into groups containing three members each. The event began with a warm welcome address by Dr. T.Ch. Madhavi, HOD/ Civil Engg, briefing the need for such aptitude - based events and how they are helpful.

Out of 45 teams, 16 teams were selected to final level. Final Level was a rapid-fire picture identification round which tests the knowledge in various aspects of life ranging from economics to history and mythology to popular media practices. It was a stiff competition between teams to answer quickly by reviewing pictures in mind. But only two teams were picked up who came out with good performance, and they were adjudged to be the winners of the event Mind sweeper.

First position was secured by the team P.Revanth Reddy, P.Vijay Vishal and P.Sai Rudresh. Second position was secured by the team Bharat Kumar and Aadilwant Singh Sidhu. A final bonus competition was conducted by Dr. T. Ch. Madhavi which is a memory game to test the participant's memorizing ability in which K.Vikasitha, N.K. Raval, G.Sai Surekha emerged as winners. Mind sweeper was a resounding success with many students acknowledging that the questions really gave their minds a hectic, yet overall enjoyable workout.



Quiz Master Raising the questions

K.S.RANGASAMY COLLEGE OF TECHNOLOGY TIRUCHENGODE

Inauguration of ICI Students Chapter:

The inauguration of ICI Students Chapter was held on 12th February 2014 at K.S.Rangasamy College of Technology. Er.R.Radha krishnan, Secretary General of Indian Concrete Institute was the Chief Guest & inaugurated the ICI Students Chapter and delivered the inaugural address. He briefed about ICI and the importance of Students Chapter in enhancing the employability of students and the benefits they can derive out of their association with ICI. Er.K.Jayasankar, Assistant Vice President, (Technical Services) UltraTech Cement Ltd was the Guest of Honour and

delivered a valuable Guest Lecture on “Next Generation Concrete”. Dr.K.Thygarajah, Principal of KSRCT addressed the gathering. Dr.G.Vennila, Head of the Civil Department welcomed the gathering initially. S.Divya, Assistant Professor introduced the Office Bearers of ICI Students Chapter.



Dignitaries on the Dias



NANDHA ENGINEERING COLLEGE - ERODE

Site Visit:

The Civil Engineering Association and ICI Student's Chapter of Nandha Engineering College along with Centre for Value Added Courses arranged the “Training on Advanced Surveying using Total Station” on 23rd & 24th December 2013. A batch of 14 students along with two Faculty Members and an Expert

Er. R. Thangamani took part in the training at Chennimalai Ghat Road. The job was to collect the data of the hill road alignment with four points across the road. The trainer shared his experience in surveying with Total Station. The training proved to be a good learning experience in marking the Geographical position of a particular place.



Students during training at Chennimalai Ghat Roads

COLLEGE OF ENGINEERING, TRIVANDRUM - THIRUVANANTHAPURAM

Training in MUD Construction:

A group of ICI students Chapter Members from College of Engineering, Trivandrum visited Wayanad tribal area during Xmas holidays to participate in a UNDP Project. A project for house construction for tribal people was undertaken by Architect Sreenivasan and the entire construction was out of mud. ICI students spent their vacation to be part of the project and to get hands on experience in construction using mud. The mud used for

construction was excavated from the site itself. After conducting initial tests, mud was made into spherical shape with an approximate diameter of one feet. They were then placed one over the other to make the wall. Plastering was done using sieved soil. It was a great experience for the students to understand this cost effective method which is also eco-friendly. The details were explained to students by Architect Sreenivasan. Students returned with the satisfaction of serving the tribal people in constructing their shelter.



ALL INDIA SHRI SHIVAJI MEMORIAL SOCIETY'S COLLEGE OF ENGINEERING - PUNE

Guest Lecture

ICI Student chapter of All India Shri Shivaji Memorial Society's College of Engineering organized a Guest Lecture on "Ready Mix Concrete" on 3rd February 2014.

Mr. Uttam Bhandare, Senior Manager Technical, RMC India, spoke on various properties of OPC. Mrs. Ashwini Deshpande spoke on various types of special concretes. The lecture was very informative to students. Mrs.S A Kothari proposed vote of thanks.



Prof. P B Nangare felicitating Mr. Uttam Bhandare

Mrs. Ashwini Deshpande

Mr. Uttam Bhandare



Audience



Sl.No.	M.No	Centre	Name	Place
A. Individual Life Members				
1	10286	Allahabad	Sanjay Kumar Ayyangar. Er	Lucknow
2	10269	Bengaluru	Prema Kumar W P. Er	Bengaluru
3	10277		Srinivasa Chakragiri Venkataramaiah. Er	Bengaluru
4	10284		Kankanhalli Shankara Srinivas. Er	Bengaluru
5	10274	Chennai	Baskaran A. Er	Madurai
6	10275		Suria Kumar A. Er	Madurai
7	10278		Sekhar M. Er	Tenkasi
8	10281		Rajesh. Er	Chennai
9	10287		Ravisankar S. Er	Dindigul
10	10289		Srinivasan N. Er	Chennai
11	10290		Manikandan R. Er	Chennai
12	10266	Chhattisgarh	Shashi Kant Dani. Er	Raipur
13	10285		Meena Murmu. Er	Raipur
14	10268	Ghaziabad	Talakokula Visalakshi. Er	Greater Noida
15	10272	Hyderabad	Mohammed Osman. Er	Secunderabad
16	10273		Venkateshwar Reddy B. Er	Hyderabad
17	10279		Seshadri Sekhar T. Dr	Hyderabad
18	10294		Pamarthi Suresh Babu. Er	Nellore
19	10280	Kolkata	Achintya Nandi. Er	Kolkata
20	10276	Nagpur	Amey Raju Khedikar. Er	Nagpur
21	10291		Laxmikant N. Vairagade. Er	Nagpur
22	10292		Dhananjay Krishnaji Parbat. Dr	Nagpur
23	10271	New Delhi	Surender Kumar Sharma. Er	New Delhi
24	10282	Puducherry	Kandasamy S. Er	Puducherry
25	10295		Thirougnaname S. Er	Puducherry
26	10267	Surat	Chandra Shekhar Jha. Er	Ahmedabad
B. Organizational Life Members				
27	10288	Bengaluru	S.J.C. Institute of Technology	Chickballapur
28	10270	Chennai	N.S.N. College of Engineering and Technology	Karur
29	10283		Sri Krishna College of Engineering and Technology	Coimbatore
30	10293	Kochi	Federal Institute of Science and Technology	Angamaly



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The 6th Asia and Pacific Young Researchers and Graduates Symposium (YGRS 2014)

- The Structural Engineering for Sustainable Development -



(Industrial Ring Road Bridge)

SIIT, Thammasat University Thailand
31st July - 1st August 2014

- Scope of YGRS 2014 -

The YGRS 2014 focuses on the new knowledge, emerging techniques, advance engineering practices which are contributing to the sustainable structural development. The official language of the symposium is English. The technical articles addressing the following topics are invited for submission:

- ❖ Computational techniques in structural engineering
- ❖ Durability of structures
- ❖ Performance-based design of the structure
- ❖ Life-cycle performance assessment and management
- ❖ Structural health monitoring and control
- ❖ Smart materials and advance material for construction
- ❖ Recycle and utilization of wastes in construction
- ❖ Performance of structure against disasters
- ❖ Management and policy for sustainable structural engineering

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- Best Paper Awards -

Technical papers of remarkable research value and outstanding technical quality will be selected for the best paper awards sponsored by Asian Concrete Federation.



- Background and Objectives -

The Asia-Pacific Young Researchers and Graduates Symposium (YRGS) series is primarily a platform for early-stage structural engineering professors, research scientists, professional engineers, postdoctoral fellows and PhD students to present their latest findings within the context of the wider structural engineering discipline. The series was initiated to promote collaboration and knowledge sharing among the young professionals.

The symposium features oral presentations predominantly from early-career structural engineering people but also includes talks from leading figures in the field. It provides an opportunity for learning about future career paths and networking with fellow researchers. One of the valuable merits of attending YRGS is the opportunity to network with a wide range of structural engineering researchers from the Asia-Pacific regions to develop collaboration and friendship.

The first YRGS was held at Kunsan National University, Korea in 2009. The second in 2010 at Zhejiang University, China; the third in 2011 at National Taiwan University, Taiwan; the fourth in 2012 at Hong Kong Polytechnic University, Hong Kong; and the fifth in 2013 at Malaviya National Institute of Technology Jaipur, India.

- Symposium Website -

For more updated information about the symposium, please visit <http://saki.siit.tu.ac.th/YRGS2014>

- Symposium Secretariat -

Any inquiry about the symposium and related matter may be sent by e-mail to the secretariat of YRGS2014 at: yrgs2014@siit.tu.ac.th

- Important Dates -

Abstract submission:	March 15 th , 2014
Abstract Acceptance:	March 31 st , 2014
Paper Submission:	May 15 th , 2014
Paper Acceptance:	May 30 th , 2014
Camera-Ready Article:	June 15 th , 2014

- Conference Period -

31st July (Thu) - 1st August 2014 (Fri)

- Registration -

Early-Bird Registration (by June 15 th):	3,500 Baht
Late Registration:	4,500 Baht

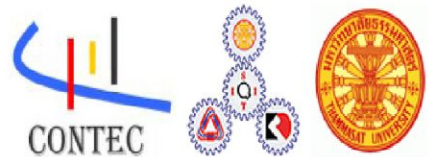
Only online payment is accepted (no on-site registration).

- Conference Venue -

Sirindhorn International Institute of Technology (Rangsit Campus), Thammasat University Thailand

- Host Institute -

Construction and Maintenance Technology Research Center (CONTEC), SIIT, Thammasat University



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