## SRI VENKATESWARA COLLEGE OF ENGINEERING



(an Autonomous Institution affiliated to Anna University, Chennai) Pennalur, Sriperumbudu Tk – 602 117



# DEPARTMENT OF CIVIL ENGINEERING

## Report of the Webinar on "Forensic Structural Engineering"

Date : 23<sup>rd</sup> May 2020, Saturday Time : 11.00 a.m. – 12.00 p.m. Mode : Online through Cisco Webex Meeting Link: Meeting URL: meetingsapac17.webex.com Meeting number: 918 421 431

### Speaker

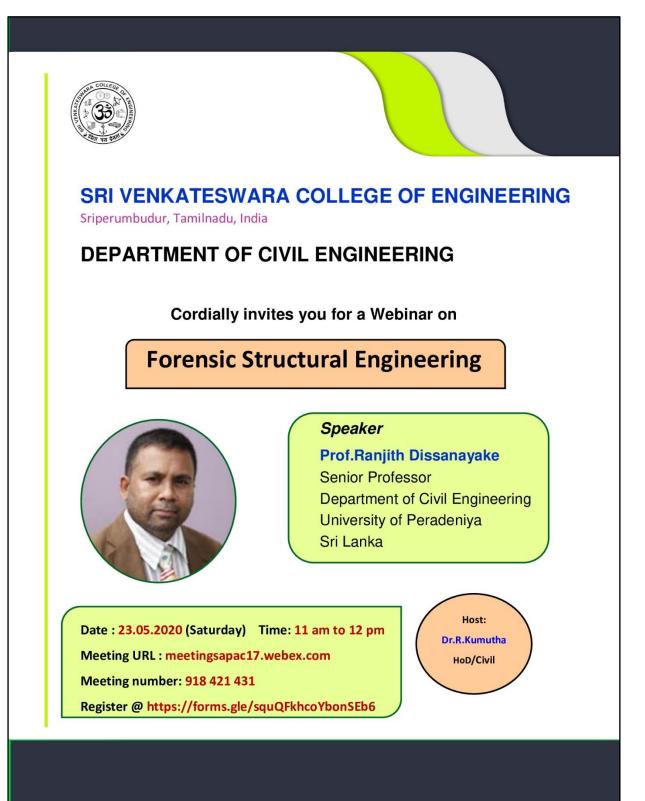
Dr.Ranjith Dissanayake Senior Professor Department of Civil Engineering University of Peradeniya Sri Lanka

### Convenor

Dr.R.Kumutha, Professor & Head/Civil Engg.

Target Audience : Students and Faculty membersNumber of Participants benefited: 66Students: 24Faculty: 42 (Both Internal & External)

### BROCHURE



### **PROFILE OF THE SPEAKER**



Professor Ranjith Dissanayake is a Senior Professor in Civil Engineering, University of Peradeniya. He is also the Secretary, State Ministry of Urban Development & Chairman, Green Building Council of Sri Lanka

#### **Educational Qualification**

1991 B.Sc (Hons) in Eng., University of Peradeniya, Sri Lanka

1995 Master of Engineering, Ehime University, Japan

1998 Doctor of Philosophy, Ehime University, Japan

#### Awards and Fellowships

Fulbright Scholar in USA 2008, Endeavour Fellow in Australia 2007, JASSO Research Fellow in Japan during 2008-2007, Young Scientist Award in 2007 for Excellence in Scientific Research, The Overseas Prize of the ICE in 2007, UK, The Australia Alumni Excellence Award in 2012.

- Published over 100 journal papers.
- Chaired over ten international conferences.
- Delivered 20 Keynote Addresses

#### Professional Qualification : Chartered Civil Engineer

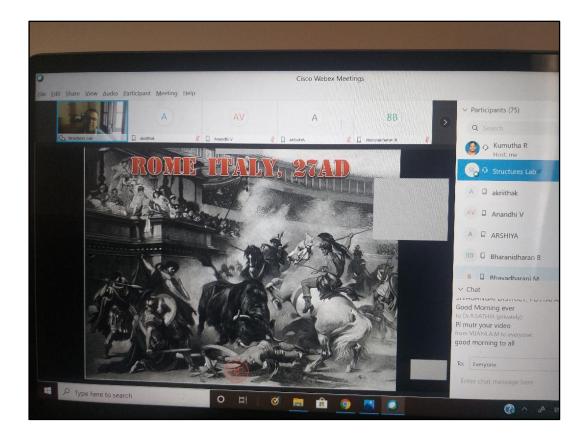
**Memberships & Positions**: Fellow, Institution of Engineers, Sri Lanka (IESL), Member, the Society of Structural Engineers Sri Lanka (SSE), American Concrete Institute (ACI), Toastmasters-International, Member, Engineers Without Borders – International (EWBI), Chairman, Civil Engineering Sectional Committee of IESL, Chairman (1) Lego International (Pvt.) Ltd, (2) ICB (Pvt.) Ltd, (3) Lanka AAC (Pvt.) Ltd. and (4) IPS (Pvt.) Ltd., VP, Chamber of Construction Industries in Sri Lanka (CCI)

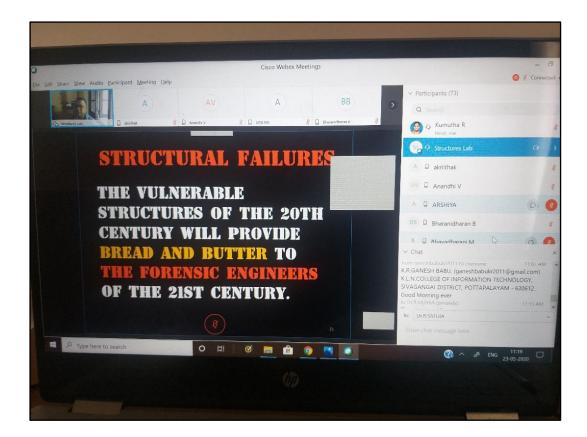
#### **Brief Report of the Webinar**

The webinar started with a welcome note and the introduction of the speaker to the Participants by Dr.R.Kumutha, Professor & Head/ Civil Engineering, who is the Convenor of this Program. Failure reasons of structures collapsed in the resent past (2017 and 2018) in Sri Lanka and around the world were discussed i.e. Pedestrian bridge collapse at Miami, USA on 17th March 2018, Building collapse at Grandpass, Colombo on 14th February 2018, Bridge collapse at Chirajara, Colombia on 16th January 2018. The main reasons for the collapses of these structures were discussed and they are negligence, improper design, incorrect construction practices, inadequate maintenance, improper alterations, bad materials and workmanship. Prof.Ranjith also highlighted the necessity of implementing proper engineering practices in order to save many lives of people and millions of money. Selected forensic investigations carried out in Sri Lanka were also discussed. One such investigation discussed is about the Investigation on Steel Bridge failure at Paragastota in 1999. Paragastota bridge is a steel truss bridge originally constructed in 1906 at Anuradhapura over Kala Oya. This bridge was brought to Peragastota in 1966 and a major repair was carried out in 1990. The bridge collapsed on 10th July 1999 when a truck carrying about 25 tons of metal was crossing the bridge An investigation was carried out to find reasons for the failure that included visual observations, taking measurements, materials testing, finite element modelling and structural analysis. It was revealed that the failure was due to overloading of the bridge that triggered the yielding of bottom chord members, resulting large deformation with consequent fracture of diagonal members of the bridge. It was also found that the overloading is not only due to the truck but due to the reinforced concrete deck laid on the bridge replacing the original timber deck in 1990 without any structural design. Prof Ranjith explained that the failure could have been avoided if proper structural design had carried out prior to the laying of the reinforced concrete deck. The session ended with a vote of thanks delivered by Dr.R.Kumutha, Professor & Head/ Civil Engineering. The participants also had appreciated the webinar.



## **SNAPSHOTS OF THE WEBINAR**



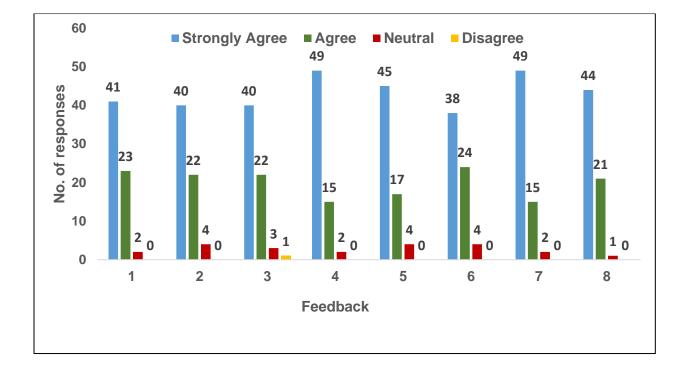


## LIST OF PARTICIPANTS

| S.No | Name of the Participant | Name of the Institution/Industry  | Category |  |
|------|-------------------------|---|----------|--|
| 1.   |                         | JYOTHISHMATHI INSTITUTE OF TECHNOLOGY   | Faculty  |  |
|      | Mamimdla Satish Goud    | AND SCIENCE   | Faculty  |  |
| 2.   | S.Selvakumar            | Dhanalakshmi Srinivasan college of Engineering<br>and Technology,chennai                        |          |  |
| 3.   | Dr.K.Vijai              | St.Joseph's College of Engineering  | Faculty  |  |
| 4.   | T Vijaya Raghavan       | Peri Institute of technology  | Faculty  |  |
| 5.   | K.R.Ganesh Babu         | K.L.N.College of Information Technology   | Faculty  |  |
| 6.   | Vijaya.A.M              | K.L.N.College of Information Technology   | Faculty  |  |
| 7.   | Dr S Praveenkumar       |   | Faculty  |  |
| 8.   | S. Swernalatha          | PSG College of Technology   | Faculty  |  |
|      |                         | St.Martin's Engineering College, Secunderabad<br>Dhanalakshmi Srinivasan college of Engineering | radany   |  |
| 9.   | Diwahar Pari            | and Technology,chennai  | Student  |  |
| 10.  | Muthumari G             | Mohamed sathak engineering college, kilakarai   | Faculty  |  |
| 11.  | Uddanti Deepthi         | Institute Of Aeronautical Engineering College   | Faculty  |  |
| 12.  | A.Mega                  | Vivekanandha college of technology for women  | Student  |  |
| 13.  | Mariammal C             | K.L.N.College of Information Technology   | Faculty  |  |
| 14.  | Dr.M.JACOB              | K.L.N.College of Information Technology   | Faculty  |  |
| 15.  | Mohana N                | SURYA GROUP OF INSTITUTIONS   | Faculty  |  |
| 16.  | Banuchandar J           | Surya group of institutions   | Faculty  |  |
| 17.  | K.Vijaya Sundravel      | K.S.RANGASAMY COLLEGE OF TECHNOLOGY   | Faculty  |  |
| 18.  | Dr.R.SATHIA             | JERUSALEM COLLEGE OF ENGINEERING  | Faculty  |  |
| 19.  | Kavinarasi M            | K.L.N.College Of Information Technology   | Student  |  |
| 20.  | B N Brinila Bright      | Mohamed sathak AJ college of engineering  | Faculty  |  |
| 21.  | S.Jegadeeshan           | Avs college of technology   | Faculty  |  |
| 22.  | Rizha Ur Rahman B       | Mohamed Sathak AJ College of Engineering  | Faculty  |  |
| 23.  | Tharini K               | SRM Valliammai Engineering College  | Faculty  |  |
| 24.  | Anandhi V               | Sethu Institute of Technology   | Faculty  |  |
| 25.  | V.Hariharan             | Sri Venkateswara College of Engineering   | Student  |  |
| 26.  | Mahalakshmi R           | Surya group of institutions   | Faculty  |  |
| 27.  | Chayan Sardar           | Sri Venkateswara College of Engineering   | Student  |  |
| 28.  | Ruby Freya              | Sri Venkateswara College of Engineering   | Faculty  |  |
| 29.  | Mathiyazhagan R         | Sri Venkateshwara College of Engineering  | Faculty  |  |
| 30.  | Basanth Babu K M        | K.L.N.College of Information Technology   | Faculty  |  |
| 31.  | V Praveen Kumar         | Sri Venkateswara College of Engineering   | Student  |  |
| 32.  | Vivedhitha Varshini A G | Sri Venkateswara College of Engineering   | Student  |  |
| 33.  | Ramanan.B.B             | Sri Venkateswara College of Engineering   | Student  |  |
| 34.  | Logeshwari R            | Sri Venkateswara College of Engineering   | Student  |  |
| 35.  | Richin John Charly      | Sri Venkateswara College of Engineering   | Student  |  |

| S.No | Name of the Participant | Name of the Institution/Industry                          | Category |  |
|------|-------------------------|---|----------|--|
| 36.  |                         | Velammal College of engineering and technology,           |          |  |
| 50.  | Sathyanarayanan M       | Madurai   | Faculty  |  |
| 37.  | A.Jenisha               | Sri Venkateswara College of Engineering                   | Student  |  |
| 38.  | Gogula Chezhiyan.N      | Sri Venkateswara College of Engineering                   | Student  |  |
| 39.  | Brithisha S             | Sri Venkateswara College of Engineering                   | Student  |  |
| 40.  | Neha G                  | Sri Venkateswara College of Engineering                   | Student  |  |
| 41.  | Akriitha K              | Sri Venkateswara College of Engineering                   | Student  |  |
| 42.  | Petchikkan M            | PET ENGINEERING COLLEGE VALLIOOR                          | Faculty  |  |
| 43.  | Ranjana Piriyadharshini | Sri Venkateswara College of Engineering                   | Student  |  |
| 44.  | G.Harshavarthani        | Sri Venkateswara College of Engineering                   | Student  |  |
| 45.  | Laleeth Kumar D         | Sri Venkateswara College of Engineering                   | Student  |  |
| 46.  | Hemalatha R             | Sri Venkateswara College of Engineering                   | Student  |  |
| 47.  | Ammaiappan M            | Rajalakshmi Engineering College                           | Faculty  |  |
| 48.  | M.Jemimah Carmichael    | Vignan's Lara institute of Technology and Science         | Faculty  |  |
| 49.  | Gokul K                 | Sri Venkateswara College of Engineering                   | Student  |  |
| 50.  |                         | Kongunadu College of Engineering and                      | Faculty  |  |
| 50.  | P.Kanaka                | Technology  |          |  |
| 51.  | Hariswaran S            | Sri Venkateswara College of Engineering                   | Faculty  |  |
| 52.  | K.Kavinmalar            | Sri Venkateswara College of Engineering                   | Student  |  |
| 53.  | Anumeena S U            | Velammal College of Engineering and<br>Technology,Madurai | Faculty  |  |
| 54.  | Lokesh.S                | P.S.V COLLEGE OF ENGINEERING AND<br>TECHNOLOGY            | Faculty  |  |
| 55.  | Siddharth J U           | Sri Venkateshwara College of Engineering                  | Student  |  |
| 56.  | S. Sathya Priya         | PERI INSTITUTE OF TECHNOLOGY                              | Student  |  |
| 57.  | M.Jenani                | Sri Venkateswara College of Engineering                   | Student  |  |
| 58.  | G.Ramachandran          | VIVEKANANDA COLLEGE OF TECHNOLOGY<br>FOR WOMEN            | Faculty  |  |
| 59.  | Diravia Balan S         | Sri Venkateshwara College of Engineering                  | Faculty  |  |
| 60.  | Kiran Kumar Pon         | Sri Venkateswara College of Engineering                   | Faculty  |  |
| 61.  | Arshiya.A.S             | Sri Venkateswara College of Engineering                   | Student  |  |
| 62.  | Shanmugasundaram R      | PSNA College of Engineering and Technology                | Faculty  |  |
| 63.  | K Dhivya                | Sethu Institute of Technology                             | Faculty  |  |

| Total Number of respondents: 66   |                   |       |         |          |  |  |  |
|---|-------------------|-------|---------|----------|--|--|--|
| Feedback statement  | Strongly<br>Agree | Agree | Neutral | Disagree |  |  |  |
| The session delivered the information I expected to receive                 | 41                | 23    | 2       | -        |  |  |  |
| The subject matter was presented effectively                                | 40                | 22    | 4       | -        |  |  |  |
| The pace and duration of the webinar was satisfactory                       | 40                | 22    | 3       | 1        |  |  |  |
| The resource person is knowledgeable  | 49                | 15    | 2       | -        |  |  |  |
| The resource person presented the information in a clear and logical manner | 45                | 17    | 4       | -        |  |  |  |
| Sufficient time was given for interaction                                   | 38                | 24    | 4       | -        |  |  |  |
| The webinar was well organized  | 49                | 15    | 2       | -        |  |  |  |
| As a result of this webinar, I gained new knowledge                         | 44                | 21    | 1       | -        |  |  |  |



#### Additional comments/feedback from participants:

- Very good session
- Very Informative Lecture
- New topic and very useful for us. Thank you for such a wonderful opportunity and expecting more similar webinar in future. Thank you.
- Kindly arrange five days FDP
- Excellent presentation
- Need much more webinars related to civil department
- Concept were understood clearly
- Gained a new knowledge of Forensic Structural Engineering
- Need more such webinars on concrete technology or underground concreting
- Program was conducted in well organised manner. Need such Program like this in coming days. Guest Speaker is very good in technical.

Prepared By Dr.R.Kumutha(HoD /Civil Engg.) Convenor