

## CURRICULUM VITAE

1. **Name and Photograph:** **Dr. RAJEEV GOEL**
2. **Designation and complete address:** Senior Principal Scientist  
 Bridge Engineering and Structures  
 CSIR-Central Road Research Institute  
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3. **Areas of Interest:**
- Structural analysis & design, Structural Safety Audit, Performance monitoring, and Health assessment, evaluation, rehabilitation & retrofitting of bridges & structures
  - Bridge maintenance management system
  - Project monitoring and quality assurance of bridges & structures during their construction

4. **Educational Qualifications:**

Class	Year of Passing	University/ Institutions	Subject	Division
PhD	2007	Indian Institute of Technology Roorkee, Roorkee	Earthquake Engineering	---
Post Graduate Diploma	1995	Indira Gandhi National Open University, New Delhi	Human Resources Management	1 <sup>st</sup>
Master of Engineering	1989	University of Roorkee, Roorkee	Structural Engineering	1 <sup>st</sup> with Honours
Bachelor of Engineering	1987	Motilal Nehru Regional Engineering College, Allahabad	Civil Engineering	1 <sup>st</sup> with Honours
Intermediate	1983	UP Board, Allahabad	Hindi, English, Maths, Physics, Chemistry	1 <sup>st</sup>
High School	1981	UP Board, Allahabad	Hindi, English, Maths, Science, Technical Drawing	1 <sup>st</sup> with Honours

### 5. Professional Experience:

S. No.	Name of Organisation	Period	Position held
1.	CSIR-Central Road Research Institute, New Delhi	January 2017 to till date	Senior Principal Scientist with additional charge of Alternate Head (Bridge Engineering and Structures) and Coordinating Officer (Maharani Bagh Staff Quarters and Horticulture)
2.	CSIR-Central Road Research Institute, New Delhi	July 2013 to November 2016 to December 2016	Senior Principal Scientist with additional charge of Alternate Head (Bridge Engineering and Structures)
3.	CSIR-Central Road Research Institute, New Delhi	July 2013 to November 2016	Senior Principal Scientist
4.	CSIR-Central Road Research Institute, New Delhi	January 2013 to July 2013	Senior Principal Scientist with additional charge of Head (Civil Engineering)
5.	CSIR-Central Road Research Institute, New Delhi	September 2011 to December 2012	Principal Scientist with additional charge of Head (Civil Engineering)
6.	CSIR-Central Road Research Institute, New Delhi	January 2008 to August 2011	Principal Scientist
7.	CSIR-Central Road Research Institute, New Delhi	March 2004 to December 2007	Senior Scientist
8.	Council of Scientific & Industrial Research, ESD, New Delhi	January 2004 to March 2004	Senior Scientist
9.	Council of Scientific & Industrial Research, ESD, New Delhi	April 2001 to December 2003	Scientist
10.	CSIR-Structural Engineering Research Centre, Ghaziabad	October 1996 to April 2001	Scientist
11.	Tehri Hydro Development Corporation Ltd., Rishikesh	July 1994 to October 1996	Engineer (Civil)
12.	Tehri Hydro Development Corporation Ltd., Rishikesh	January 1991 to June 1994	Assistant Engineer (Civil)
13.	Tehri Hydro Development Corporation Ltd., Rishikesh	January 1990 to January 1991	Engineer (Trainee)
14.	University of Roorkee, Roorkee	August 1989 to January 1990	Research Assistant

## 6. Membership to Professional Bodies:

Sl. No.	Name of Professional Body	Type of Membership
1.	Computer Society of India	Life Member
2.	Ferrocement Society (India)	Life Fellow
3.	Indian Association of Structural Engineers	Life Fellow
4.	Indian Concrete Institute	Life Fellow
5.	Indian Geotechnical Society, Delhi Chapter	Life Member
6.	Indian Institution of Bridge Engineers	Life Fellow
7.	Indian Roads Congress	Life Member
8.	Indian Society for Construction Materials and Structures	Life Member
9.	Indian Society of Earthquake Technology	Life Fellow
10.	Indian Society of Rock Mechanics and Tunnelling Technology	Founder Life Member
11.	Indian Society for Non-destructive Testing	Life Member
12.	Indian Society for Wind Engineering	Life Member
13.	Indian Water Resources Society	Life Member
14.	Institution of Vastu Science (India)	Life Member
15.	International Association for Bridge and Structural Engineering, Switzerland	Annual Member
16.	The Indian Science Congress Association	Life Member
17.	The Institution of Engineers (India)	Life Fellow

## 7. Achievements:

### a. Honours and Awards

- Recipient of 'OUTSTANDING CONCETE TECHNOLOGIST AWARD OF WESTERN UP' for Year 2017 from Indian Concrete Institute, Western UP Centre, Ghaziabad
- Recipient of 'Outstanding Achievement Award for Laboratory Support Services', CSIR-CRRI for year 2011-12
- Recipient of 'Bharat Jyoti Award along with Certificate of Excellence' for year 2008
- Recipient of 1st prize in R&D Technologies/ Expertise Brochure Competition, Organised by CRRI, New Delhi in September, 2004

- Recipient of ‘Rashtriya Gaurav Award along with Certificate of Excellence’ for Year 2004 for meritorious services, Outstanding performance and remarkable role
- Reviewer of Research papers of many International/National Journals such as ASCE Journal of Bridge Engineering; ACI Materials & Structural Journal; Computers and Concrete; Indian Roads Congress; etc.
- Reviewer of Research proposals for Science Engineering Research Board, Department of Science and Technology. Govt. of India
- Recognised as ‘Professor’ in the Faculty of Engineering Sciences by Academy of Scientific and Innovative Research (AcSIR) since January 2013
- Recognised as ‘Associate Professor’ in the Faculty of Engineering Sciences by Academy of Scientific and Innovative Research (AcSIR) for the period January 2008 to December 2012
- Recognised as ‘Referee’ by following institution for evaluating the PhD thesis and conducting Open Viva-voce
  - RTM Nagpur University, Nagpur
  - National Institute of Technology, Hamirpur (HP)
- ‘Doctoral Advisory Committee’ Member of Research Scholars of Academy of Scientific and Innovative Research (AcSIR)
- ‘External Examiner’ of PG students of Academy of Scientific and Innovative Research (AcSIR)
- ‘External Examiner’ of UG students of Delhi Technological University
- Member B1 committee (General design features, bridges and grade separated structures) of Indian Roads Congress for period 2015-2017 and 2018-2020
- Member, B4 committee (Plain, reinforced and prestressed concrete structures) of Indian Roads Congress for period 2006-2008 and 2009 to 2011
- Alternate Member, BIS Panel on “Plain, Reinforced and Prestressed Concrete, CED 46:P8, 2010-12, 2015-17
- Alternate Member, BIS Panel on “Standardization work under the special structures sectional committee”, CED 38 since April 2018
- Jury member for evaluation of the various nominations for ICI Young Scientist award for year 2012 by Indian Concrete Institute
- Jury member for evaluation of the nominations for various award of ICI Western UP Centre Ghaziabad from 2008 to 2019
- Elected Member, Executive Committee, The Institution of Engineers (India), Ghaziabad local Centre for the period 2010-2012, 2014-2016 and 2016-2018
- Elected Honorary Secretary, Indian Concrete Institute, Western UP centre Ghaziabad for the period 2001-2003, 2003-2005, 2005-2007, 2007-2009 and 2009-2011

- Elected Chairman, Indian Concrete Institute, Western UP centre Ghaziabad for the period 2011-2013 and 2013-15
- Elected Vice-President (North Region) of Indian Concrete Institute for the period 2015-2017
- Elected Governing Council Member of
  - Indian Association of Structural Engineers, New Delhi for the period 2012-14
  - Indian Concrete Institute, Chennai for the period 2011-2013, 2013-2015 and 2015-2017
  - Engineering Council of India as a representative of Indian Concrete Institute the period 2016-2018
- Guest of Honour on Concrete Day Celebrations 2017 by Indian Concrete Institute, New Delhi on September 8, 2017
- Guest of Honour at Inaugural ceremony of Two days Conference on ‘Repair, Rehabilitation and retrofitting of Concrete Structures’, at New Delhi during September 9-10, 2016, organised by Indian Concrete Institute, New Delhi
- Guest of Honour on Technical Program on ‘Durability of Concrete Structures’ on May 16<sup>th</sup>, 2012 at Aligarh organised by Indian Concrete Institute, Western UP centre Ghaziabad in association with Grasim Industries, New Delhi
- Co-chaired Technical Session-1 ‘Challenges in concreting operations’ at National Workshop on ‘Challenges of Concreting in Hilly Areas’ at Roorkee on March 19<sup>th</sup>, 2016, organised by Indian Concrete Institute, Uttarakhand.
- Advisory committee member of
  - Seminar on ‘Emerging materials and methods in Concrete Construction’, held at Chennai during May 2017, organised by Indian Concrete Institute
  - International conference on Innovations in Concrete for Infrastructure Challenges, October 6-7, 2017 at Nagpur, organised by Indian Concrete Institute
  - Third International Conference on Innovative, Advancements in Engineering and Technology (IAET-2018), organised by Jaipur National University in association with Myongji University, South Korea during March 23-24, 2018 at Jaipur National University, Jaipur.
  - Fourth International Conference on Innovative, Advancements in Engineering and Technology (IAET-2020), being organised by Jaipur National University in association with Myongji University, South Korea during March 2020 at Jaipur National University, Jaipur.
- Member, Board of Studies (BOS) of Civil Engineering Department, Sharda University, Greater Noida for finalising the Curriculum of B.Tech and M.Tech program.

**b. Research Projects Since 2005**

- Innovative Technologies for Health Assessment and damage mitigation of structures
- Development of Intelligent Remote Health Monitoring for bridges
- Health monitoring of a 6-lane Roadway over Palam Drain at Dwarka, New Delhi through instrumentation
- Development of Autonomous Underwater Robotics
- Development of Bridge Maintenance Management System in GIS Environment for Bridges on National and State Highways
- Creation of complete range of independent Testing Facilities for Expansion Joints at CRRI, New Delhi
- Development of Mobile Bridge Inspection Unit
- Development of Fiber Bragg Grating based Distributed Strain Sensor System for Concrete Bridges
- Performance Evaluation of Existing Bridges for Increased Axle Loads and Excessive Environmental Conditions
- Collection and analysis of bridge condition and inventory data by MBIU or any other equipment for the purpose of major/minor bridges on all NHs including those with NHAI for a period of three years
- Independent quality assurance during construction and subsequent performance evaluation of road and bridges for link road connecting NH-24 & NH-58
- Dynamic Response of Prestressed Concrete Bridges
- Performance monitoring of Second Thane Creek Bridge, Mumbai using Instrumentation
- Health monitoring of bridges of Northern Railways, Eastern Railway and South Eastern Railways
- Collection and analysis of bridge condition and inventory data by MBIU or any other equipment for the purpose of major/minor bridges on all National Highways in the state of Jharkhand for a period of three years
- Independent review of Signature bridge for Technical and Contractual issues
- Development of a customized RPAV (Drone) for smart application in the field of remote inspection and monitoring of bridges
- Experimental Investigations of “Hybrid Composite Beam System”
- Determination of In-situ Early Strength of Rapid-setting Concrete using Piezo Sensors

### c. Research Publications

#### Papers in Journals

- Rajeev Goel and GK Sahu (2019), 'Seismic Vulnerability Assessment of Existing RC Buildings - Comparative Study of Codal Provisions of Various Countries', International Journal of Technical innovations in Modern Engineering and Science, Vol. 5, Issue-03, March, pp. 668-673.
- Jasvir Singh, Rajeev Goel and Ajit Singh (2018), 'Study of soil structure interaction for framed structures with raft (shallow) foundations', International Journal of Advanced Scientific Research and Management', Vol. 3, Issue-12, December, pp. 253-262.
- Jasvir Singh, Rajeev Goel and Ajit Singh (2018), 'Study of soil structure interaction for framed structures with pile foundations', International Journal of Technical innovations in Modern Engineering and Science, Vol. 4, Issue-12, December, pp. 596-605.
- Rajeev Goel (2018), 'Load Testing of Continuous Span Bridges', Civil Engineering & Construction Review, Vol.31, No.10, October, pp.52-61.
- Rajeev Goel and GK Sahu (2018), 'Seismic Vulnerability Assessment and Strengthening of Existing Reinforced Concrete Buildings', New Building Materials and Construction World, Vol. 23, Issue-11, May, pp. 140-150.
- PC Sharma and Rajeev Goel (2017), 'Use of Ferrocement for construction of Mini Check Dams and Diversion Structures', New Building Materials and Construction World, Delhi, Vol.23, Issue 4, October, pp.146-152.
- Kumar Shashi Bhushan, Rajeev Goel and Awadhesh Kumar (2017), 'An Experimental Study to Estimate Loss in Prestress and Determining Fundamental Natural Frequency of Prestressed Concrete Bridge', New Building Materials and Construction World, Delhi, Vol.23, Issue 3, September, pp.149-156.
- Rajeev Goel (2015), 'Load Testing of Second Thane Creek Bridge, Mumbai', New Building Materials and Construction World, Vol.21, Issue-6, December, pp.94-107.
- Rajeev Goel, SK Sharma & P Lakshmy (2015), 'Condition Assessment and Rehabilitation of An Impact Damaged Bridge', The Bridge and Structural Engineer, June, Vol.45, No.2, pp.21-28.
- P. Lakshmy, Rajeev Goel, S.K. Sharma and Pardeep Kumar (2015), 'Performance Evaluation of North Carriageway of Second Thane Creek Bridge through Load Testing', ICJ The Indian Concrete Journal, Vol.89, Issue 6, pp.13-23.
- Rajeev Goel, SK Sharma, Naveen Kumar & Parvez Ahmad (2012), 'Rehabilitation of PSC bridge – A case study', Journal of New Building Materials & Construction World, Delhi, Vol.18, Issue-6, December 2012, pp. 160-169.
- SK Sharma, Lakshmy P, Rajeev Goel & Sushil Kumar (2011), 'Lessons Learnt from Repair and Rehabilitation of Concrete Bridges', IRC Journal

- Rajeev Goel, Ram Kumar and D.K. Paul (2008), 'Response of existing prestressed concrete bridge under Uttarkashi earthquake', Journal of Structural Engineering, SERC, Chennai, Vol.35, No.5, December 2008-January 2009, pp.334-338.
- Rajeev Goel, Ram Kumar and D.K. Paul (2008), 'Software for finite element analysis of prestressed concrete structures', Journal of New Building Materials and Construction World, Vol.14, No.4, October 2008, pp.180-192.
- Rajeev Goel, Ram Kumar and D.K. Paul (2007), 'Comparative study of various creep and shrinkage prediction models for concrete', ASCE Journal of Materials in Civil Engineering, Vol.19, No.3, March, pp.249-260.
- Rajeev Goel and P.C. Sharma (2003), 'Case Studies on Rehabilitation of Deteriorated Concrete Structures', Journal of New Building Materials and Construction World, New Delhi, March, pp.18-28.
- Rajeev Goel and P.C. Sharma (2002), 'Assessment of deteriorated concrete structures', Journal of New Building Materials and Construction World, New Delhi, July, 2002, pp. 66-76.
- Rajeev Goel, P.C. Sharma and N.K. Verma (2002), 'Earthquake resistant design and detailing of buildings', Journal of New Building Materials and Construction World, New Delhi, April, pp. 48-57.
- Rajeev Goel (2001), 'Environmental aspects in planning and management of water resources projects', Journal of New Building Materials and Construction World, New Delhi, February, pp.44-54.
- Rajeev Goel (2000), 'Dimensioning of rock supporting system for vertical shafts', Journal of New Building Materials and Construction World, New Delhi, May, pp.92-95.
- Rajeev Goel (2000), 'Rock tunnelling techniques', Journal of New Building Materials and Construction World, New Delhi, March, pp.64-69.
- Rajeev Goel (1999), 'Computer-aided design and drafting of RCC columns', Journal of New Building Materials and Construction World, New Delhi, November, pp.36-40.
- Rajeev Goel (1998), 'Hydro power development in Uttranchal region', Journal of New Building Materials and Construction World, New Delhi, November, pp.42-48.
- Rajeev Goel (1998), 'Assessment of damages in RC structures and their rehabilitation', Journal of New Building Materials and Construction World, New Delhi, March, 1998, pp.6-9.
- Rajeev Goel and Prabhkirpal Singh (1997), 'High performance concrete - A solution to various problems', Journal of New Building Materials and Construction World, New Delhi, December, pp.27-35.

#### **Papers in International Conferences**

- Rajeev Goel (2018), 'Assessment of Load Carrying Capacity of Bailey Bridge, Koteshwar Hydroelectric Project, Uttarakhand', Proceedings (in CD ROM) of



International Conference on Advances in Concrete, Structural & Geotechnical Engineering (ACSGE 2018), organised by BITS, Pilani at Pilani during February 26-28.

- Rajeev Goel, P. Lakshmy, S.K. Sharma, R.K. Garg, G. K. Sahu, & JK Goyal (2016), 'Development of Bridge Maintenance Management System in GIS Environment in India', Proceedings of 2<sup>nd</sup> International Conference on 'Sustainable Construction Materials and Technologies', Las Vegas, USA during August 7-11, pp.1753-1761.
- Rajeev Goel, S.K. Sharma, J.K. Goyal, P. Lakshmy, & Rajeev Garg (2016), 'A Case Study of Strengthening of Distressed Prestressed Concrete Box Girder Bridge', Proceedings of 2<sup>nd</sup> International Conference on 'Sustainable Construction Materials and Technologies', Las Vegas, USA during August 7-11, pp.1742-1752.
- Rajeev Goel (2016), 'Maintenance and Monitoring Strategies for Concrete Bridges of Indian Highways', 2<sup>nd</sup> International Innovative Advancements in Engineering and Technology (IAET – 2016), Organised by Jaipur National University in association with Myongji University, South Korea, Jaipur, India during April 1-2.
- Rajeev Goel, SK Sharma & P Lakshmy (2014), 'Load Testing of Continuous Four Span Unit of PSC Box girder bridge', Proceedings of 9<sup>th</sup> International Conference on 'Short and Medium Span Bridges', Cagary, Alberta, Canada, July 15-18
- Rajeev Goel, P Lakshmy, SK Sharma, Rajeev Kumar Garg, JK Goyal, GK Sahu & VVLK Rao (2014), 'Bridge Maintenance Management System in GIS Environment in India', Proceedings of 9<sup>th</sup> International Conference on 'Short and Medium Span Bridges', Cagary, Alberta, Canada, July 15-18
- SS Gaharwar, Rajeev Goel, & RK Garg (2013), 'Challenges of quality assurance in National highway projects being executed on BOT mode under DBFOT pattern in India', Proceedings of International Conference on 'Trends and Challenges in Concrete Structures', Ghaziabad, December 19-21, pp. 840-850.
- Rajeev Goel, SK Sharma & P Lakshmy (2013), 'Case studies of assessment of load carrying capacity of bridges', Proceedings of International Conference on 'Trends and Challenges in Concrete Structures', Ghaziabad, December 19-21, pp. 801-808.
- GK Sahu, Rajeev Goel, VVLK Rao, RK Garg & P Lakshmy (2013), 'Health monitoring of six-lane roadway over Pala drain Dwarka, New Delhi through instrumentation', Proceedings of International Conference on 'Trends and Challenges in Concrete Structures', Ghaziabad, December 19-21, pp. 576-589.
- Rajeev Goel, P. Lakshmy, SK Sharma, Rajeev Garg, JK Goyal & GK Sahu (2013), 'Development of Bridge Maintenance Management System in GIS environment', Proceedings of IABSE Symposium on 'Long span bridges and Roofs – Development, design and Implementation', Kolkata, October 24-27, Manuscript ID Kolkata-0133-2013 R1.

- Rajeev Goel, SK Sharma & P Lakshmy (2012), 'Rehabilitation of distressed bridges', Proceedings of International Workshop on 'Innovations in repair and rehabilitation of structures', Ghaziabad, December 17-18, pp.41-51.
- Rajeev Goel and Suraj Parkash (2010), 'Performance of prestressed concrete bridge designed as per Indian codes under fatigue loading', Proceedings of 8<sup>th</sup> International Conference on Short and Medium Span Bridges -2010, to be held at Sheraton on the Falls, Niagara Falls, Ontario, Canada, during August 3-6, pp.326-1 to 326-9.
- Rajeev Goel, R.K. Garg, P. Lakshmy and Ram Kumar (2010), 'Assessment of residual life of existing RCC bridges', Proceedings of Joint IABSE-fib Conference on CODES IN STRUCTURAL ENGINEERING Developments and Needs for International Practice, Cavtat, Dubrovnik-Neretva County, Croatia May 3-5, pp.1209-1216.
- Rajeev Goel, R.K. Garg and Ram Kumar (2009), 'Assessment of present and future rating of existing RCC bridges', Proceedings of First International Conference on Advances in Concrete, Structural and Geotechnical Engineering, Pilani, October 25-27, pp.1-10.
- Rajeev Goel, Ram Kumar and D.K. Paul (2007), 'Nonlinear FE analysis of prestressed concrete structures considering creep and shrinkage effects', Proceedings of Structural Engineers World Congress, Bangalore, November 2-7.
- Rajeev Goel (2004), 'Assessment of Distressed Concrete Structures by NDT Techniques', Proceedings of International Conference on World of Innovation in Structural Engineering, Hyderabad, December, pp.361-377.
- S. Bhaskar and Rajeev Goel (2001), 'Assessment of a multi-storey concrete building by non-destructive testing – A case study', Proceedings of Structural Engineering Convention 2001 – An International Meet, IIT, Roorkee, October, pp. 899-909.
- S. Bhaskar and Rajeev Goel (1999), 'Assessment and rehabilitation of concrete structures', Proceedings of International Conference on Structural Engineering, Ghaziabad, September, pp.591-597.
- Rajeev Goel and S. Bhaskar (1999), 'Evaluation of durability of RCC structures', Proceedings of International Conference on Structural Engineering, Ghaziabad, September, pp.225-231.
- Rajeev Goel, S. Bhaskar, Mahesh Chandra, Manu Saxena and B.K. Goyal (1999), 'Damage assessment of RC structures and their rehabilitation', Proceedings of South Countries Conference on Challenges to Architects and Civil Engineers During Twenty First Century, Kathmandu, Nepal, April, Supplementary volume, pp.40-49.

#### **Papers in National Conferences**

- Rajeev Goel (2015), 'Non-destructive Evaluation Techniques for Assessment of present Condition of Concrete Bridges', Proceedings of National Seminar on 'Roads and Bridges', organised by Indian Concrete Institute, Western UP Centre Ghaziabad at Agra on September 19, pp. 27-40.

- Rajeev Goel & PC Sharma (2015), 'Recycling and Reuse of Building Waste in Construction Projects – Importance for Indian Conditions', Proceedings of All India Seminar on 'New Developments in use of Alternative Materials for Concrete, Nagpur, March 13-14, Paper No.44.
- PC Sharma & Rajeev Goel (2015), 'Light Weight Concrete Produced by Recycling and Reuse of Aerated Autoclaved Concrete Waste', Proceedings of All India Seminar on 'New Developments in use of Alternative Materials for Concrete, Nagpur, March 13-14, Paper No.38.
- GK Sahu, RK Garg, Rajeev Goel, L Janpangi & P Lakshmy (2014), 'Performance monitoring of Bridges through instrumentation', Proceedings of 9th Symposium on Advanced Science and Technology in Experimental Mechanics, New Delhi, November 1-6, Paper No.96.
- Rajeev Goel, SK Sharma, GK Sahu & P Lakshmy (2014), 'Application of Non-destructive Evaluation Techniques in assessment of present condition of concrete bridges', Proceedings of 9th Symposium on Advanced Science and Technology in Experimental Mechanics, New Delhi, November 1-6, Paper No.95.
- PC Sharma, Rajeev Goel, SK Singh and Suraj Parkash (2012), 'Construction of large Shankh shaped ferrocement structure: A case study', Proceedings of Twenty eighth National convention of Civil Engineers and National Conference on 'Role of Infrastructure for sustainable development', organised by The Institution of Engineers (India), Roorkee Local Centre, Roorkee, October 12-14, pp.347-355.
- Rajeev Goel (2012), 'Bridge Maintenance Management System in GIS Environment', Souvenir of Diamond Jubilee of CSIR-CRRI, Delhi, July, pp. 79-81.
- Suraj Parkash & Rajeev Goel (2012), 'Effect of Restrained Bearings on Response of Prestressed Concrete Bridges', Proceedings of Conference on 'Innovative Challenges in Civil Engineering', Bhatinda, March 15-16, pp.63-67.
- Rajeev Goel and Suraj Parkash (2012), 'Treatise of Fibre Reinforced Concrete', Proceedings of Conference on 'Fibre Reinforced Concrete – Global developments', Nagpur, February 13-14, pp.7-16.
- Parvez Ahmad, Naveen Kumar, Rajeev Goel & SK Sharma (2011), 'Rehabilitation of Distressed PSC Bridge', Souvenir of 72th Annual Session of Indian Roads Congress, Lucknow, November, pp.72-77.
- Rajeev Goel & P Lakshmy (2011), 'Development of Bridge Management System in GIS Environment', Souvenir of Diamond Jubilee of CSIR-CRRI, Delhi, July, pp.63-66.
- PC Sharma, Rajeev Goel and DP Goyal (2011), 'Ferrocement Shankh – An Architectural Marvel', Proceedings of National Conference on 'Ferrocement', Pune, India, May 13-14, pp.213-216.

- Rajeev Goel, SK Sharma, Naveen Sharma & Parvez Alam Khan (2011), 'Rehabilitation of PSC Bridge – A Case Study', Proceedings of National Conference on 'Repair and Rehabilitation of Concrete Structures', Noida, India, May 6-7, pp. 487-496.
- PC Sharma and Rajeev Goel (2011), 'Protective Coatings for Ferrocement Structures', Proceedings of National Conference on 'Repair and Rehabilitation of Concrete Structures', Noida, India, May 6-7, pp. 318-329.
- SK Jain and Rajeev Goel (2011), 'A Case Study of Repair and Rehabilitation', Proceedings of National Conference on 'Repair and Rehabilitation of Concrete Structures', Noida, India, May 6-7, pp. 68-72.
- प्रेम चन्द्र शर्मा व राजीव गोयल (2011), 'फेरोसीमेंट शंख – एक अनूठी संरचना', जीक्षासा (भारतीय प्रोधोगिकी संस्थान, नई दिल्ली द्वारा प्रकाशित), 25, स्वर्ण जयंती विशेषांक, 31-38.
- Rajeev Goel and P.C. Sharma (2009), 'Non-destructive evaluation of concrete structures', National Conference on Sustainable Concrete Infrastructure Development, Organised by Indian Concrete Institute, Rajasthan Centre Jaipur, April, pp.371-388.
- Rajeev Goel, Ram Kumar and D.K. Paul (2009), 'Seismic Response of Prestressed Concrete Bridges' Proceedings of National Conference on 'Trends and Challenges in Structural Engineering and Construction Technologies', Organised by CBRI Roorkee at Roorkee February, pp.103-112.
- Rajeev Goel and P.C. Sharma (2009), 'Non-destructive evaluation of concrete structures', National Conference on Sustainable Concrete Infrastructure Development, Organised by Indian Concrete Institute, Rajasthan Centre, April, pp.371-388.
- Rajeev Goel, Ram Kumar and D.K. Paul (2009), 'Seismic Response of Prestressed Concrete Bridges' Proceedings of National Conference on 'Trends and Challenges in Structural Engineering and Construction Technologies', Organised by CBRI Roorkee at Roorkee February, pp.103-112.
- Rajeev Goel, Ram Kumar and D.K. Paul (2008), 'Seismic response of prestressed concrete bridges considering time-dependent effects of creep and shrinkage', Proceedings of National Seminar on 'Recent Advances and Future Trends in Design and Construction of Bridges', Hyderabad, July, 11-13.
- R.K. Garg and Rajeev Goel (2007), 'Considerations of aerodynamic forces in designing guyed towers in cyclonic wind region', Fourth National Conference on Wind Engineering, SERC, Chennai, 30th October-1st November, pp.367-372.
- Rajeev Goel, Ram Kumar, and D.K. Paul (2006), 'A Study of Effects of Creep and Shrinkage on Prestressed Concrete Beams', Proceedings of 13<sup>th</sup> Symposium on Earthquake Engineering, IIT, Roorkee, December, pp.642-649.

- Suraj Parkash, Rajeev Goel and Ram Kumar (2006), 'Fatigue Performance of Prestressed Concrete Bridges – State-of-the-art', Proceedings of National Seminar on Advances in Bridge Engineering, IIT, Roorkee, March, pp.479-486.
- Rajeev Goel, Ram Kumar, Suraj Parkash and D.K. Paul (2006), 'Prediction of Creep and Shrinkage Strains in Prestressed Concrete Bridges', Proceedings of National Seminar on Advances in Bridge Engineering, IIT, Roorkee, March, pp.543-554.
- P.C. Sharma and Rajeev Goel (2003), 'Causes of Distress in RCC Structures - Techniques for Repair and Rehabilitation', Proceedings of Seminar on Structural Rehabilitation and Water Proofing, The Institution of Engineers (India), Ghaziabad Local Centre, Ghaziabad, October, pp. II/8.1-8.15.
- Rajeev Goel and S.K. Singh (2001), 'Assessment and rehabilitation of distressed concrete structures', Proceedings of National Workshop on Rehabilitation/Retrofitting of Buildings, Roorkee, February, pp.61-72.
- Rajeev Goel (2000), 'Condition assessment and rehabilitation of weak buildings', Proceedings of National Technical Workshop in Hindi on Construction Materials, Strengthening and Maintenance Techniques for Bridges and Buildings, Ghaziabad, June, pp.92-97.
- Rajeev Goel and B.K. Goyal (1999), 'Reduction in compressive strength of concrete due to fire', Proceedings of UGC National Seminar on Multi-Storey Buildings of Growing Towns - Problems and Remedies', Department of Structural Engineering, JNV University, Jodhpur, March, pp.256-262.
- Rajeev Goel and S. Bhaskar (1998), 'Assessment of durability of concrete structures', Proceedings of All India Seminar on Concrete for Infra-structural Development, Roorkee, December, pp.277-286.
- Rajeev Goel and Mahesh Chandra (1998), 'Assessment of damages of RC structures by NDT techniques', Proceedings of All India Seminar on Advances in Non-Destructive Evaluation Techniques, Calcutta, April.
- Rajeev Goel (1997), 'Use of superplasticizers in concrete and their utility', Proceedings of National Seminar on Role of Building Chemicals in Construction Industry', Allahabad, July, pp.I/9-15.
- Rajeev Goel, Kulveer Singh and Rajeev Vishnoi (1997), 'Adopted scheme of Tehri dam spillways', Proceedings of Seminar on Hydro Power Development in Uttarakhand and Adjoining Himalayan Region, Dehradun, February, pp.106-114.
- Rajeev Goel (1996), 'Computer-aided design and drafting of beams on personal computer using Turbo C', Proceedings of National Conference on Computer-Aided Structural Analysis and Design, Hyderabad, January, pp.250-258.
- Rajeev Goel (1996), 'Computer-aided structural analysis and design of training walls of spillway structures on Personal Computer', Proceedings of National Conference on Computer-Aided Structural Analysis and Design, Hyderabad, January, pp.312-321.

- A.C. Khanduri, Rajeev Goel and G.C. Nayak (1989), 'Computer-Aided detailing of R.C. structures', Proceedings of National Conference on Detailing of R.C. and Steel Structures, Madras, December.

**d. Any Other information**

**Patents/Copyright**

Copyright of the following software:

- Software CRASH
- Software DAPCAS

**Editorship of Books**

- Proceedings of the National Seminar on 'Roads and Bridges', organised by Indian Concrete Institute, Western UP Centre Ghaziabad at Agra on September 19, 2015, ISBN 9788192156409
- Proceedings of the International Conference on 'Trends and Challenges in Concrete Structures', organised by Indian Concrete Institute, Western UP Centre Ghaziabad at Ghaziabad during December 19-21, 2013, ISBN 9788192891200
- Proceedings of the International Workshop on 'Innovations in Repair and Rehabilitation of Structures', organised by Indian Concrete Institute, Western UP Centre Ghaziabad at Ghaziabad during December 17-18, 2012, ISBN 9789382062981
- Proceedings of the National Conference on 'Repair and Rehabilitation of Concrete Structures', organised by Indian Concrete Institute, Western UP Centre Ghaziabad at Noida during May 6-7, 2011, ISBN 9788192156408

**Software Development**

- Computer-aided Design and drafting of RCC beams and RCC Columns
- Computer-aided assessment of effect of fire on square, rectangular or circular shaped members of concrete structures under various fire loading conditions
- Computer-aided analysis and design of retaining walls of spillways
- Software DAPCAS for Finite element based dynamic analysis of prestressed concrete structures considering nonlinear material properties and effects of creep and shrinkage
- Software CRASH for prediction of creep and shrinkage in concrete by various analytical models
- Software Indo-BMMS for maintenance planning, budgeting and prioritisation of RCC bridges on National and State Highways

- Software to interpret the field data, obtained using Schmidt hammer and Ultrasonic pulse velocity method, using statistical analysis to assess the characteristic strength of concrete
- Water power availability, Flood routing for Tehri HPP
- Various post-processors for handling output results of NISA software
- Software for degradation modelling of concrete bridges considering Environmental effects such as Corrosion, Alkali-silica reaction
- Software to find out the residual life of rail and road bridges
- Software to find out the rating of rail and road bridges

### **Research Guidance/Supervision**

- Guiding Er. Kumar Shashi Bhushan, Research scholar of Delhi Technological University, Delhi
- Guiding Er. Gaurav Verma, Research scholar of Academy of Scientific and Innovative Research (AcSIR)
- Guiding Er. Neeraj Jain, Research Scholar of Academy of Scientific and Innovative Research (AcSIR)
- Guiding Er. AK Goel, Research scholar of Singhania University, Rajasthan
- Guiding Er. Jasvir Singh, Research scholar of Shri Venkateshwara University, (Uttar Pradesh)
- Guided Er. SK Jain, Research scholar of Singhania University, Rajasthan (Ph.D. degree awarded)
- Guided/guiding more than 10 numbers of Post-graduate Civil Engineering students of many universities/institutes
- Guided/guiding more than 20 numbers of Under-graduate/ AMIE Civil Engineering students of many universities/institutes

### **Research Reports**

- More than 250 numbers

### **Important Assignments Since 2014**

#### **i. Structural Analysis & Design**

- Design of Six Lane Single Span Bridges at RD29800, RD37000, RD42000 and RD54520 of Gurgaon Canal, Faridabad
- Design of Pedestrian Subway in Airforce Palam Area, New Delhi
- Design of 30m Single Span Foot Over Bridge on Palam drain road, Dwarka, New Delhi
- Design of Shed for Mobile Bridge Inspection Unit

- Design of Four Lane Single Span Bridge with Skew Angle of 20 Degree on Gurgaon Canal at RD 17800 connecting Sector-55-56 of Faridabad
- Structural analysis and design of Bridge for MERADO, Ludhiana
- Proof Checking of Design/Drawings for the Construction of three-lane single cell box-girder PSC bridge Over River Hindon on NH-58E, Ghaziabad
- Scrutiny of Detailed Project Reports of Long Span Bridges for the state of Chhattisgarh
- Review of design of Rigid/flexible pavement and advertisement structures for DND Flyway
- Design of single span two lane bridge on Gurgaon canal at RD 2245m connecting Sector-3 and 8 village Sihi in Faridabad
- Design of prefab/precast concrete segmental cross-drainage cum roadway over Sitapuri drain, Dwarka, New Delhi
- Design of single span six lane bridge on Gurgaon canal at RD 13700m connecting Sector-24 and 55 and Sohna road in Faridabad
- Design of single span two-lane bridge on Gurgaon canal feeder at RD 50844m in Faridabad
- Preparation of RFQ cum RFP document and Proof Checking of Design of Elevated road bridge from Ghantaghar to Bhatia mode in Ghaziabad
- Design of single span two-lane bridge on Gurgaon canal feeder at RD 7150 in Faridabad

## **ii. Assessment, Rehabilitation & Quality Assurance**

- Checking Construction Work of Pedestrian Foot Over Bridge Across Bhisham Pitamaha Marg Near Jawahar Lal Nehru Stadium, New Delhi
- Rehabilitation of Sultanpuri bridge at RD 21260m on supplementary drain, Delhi
- Quality Assurance during rehabilitation of flyover at Bhisham Pitamaha Marg, Sewanagar, New Delhi
- Assessment of load carrying capacity of Bailey bridge, Koteshwar hydroelectric project, Uttarakhand
- Strengthening measures for Kalimati road bridge (Howrah bridge), Jamshedpur
- Repair and Rehabilitation of Old ITO bridge over river Yamuna, Delhi
- CTE Inspection of Dilli Haat Pitampura, New Delhi
- Project Management Consultant for the Construction of three-lane Bridge Over River Hindon on NH-58E, Near Cremation Ground, Ghaziabad
- Strengthening measures for CRRI staff quarters, MBSQ, New Delhi



- CTE inspection of ROB and RUB on road no. 68 at Nandnagari, New Delhi
- Investigation for improvement of condition of road over Farakka barrage, West Bengal
- Quality Audit of Structures of Lucknow-Muzaffarpur National Highway Project (8 Contracts)
- Quality Checking for the Construction of Six Lane Link Road Between NH-24 Bye Pass & NH-58 At Ghaziabad Including ROB (excluding Railway Portion) on Delhi-Howrah Rail Track
- Load testing of One Continuous Unit of north carriageway of second Thane creek bridge, Vashi, Mumbai
- Quality control/assurance of the construction of elevated corridor from Mangolpuri to Mukarba chowk, New Delhi
- Project Monitoring and Quality Assurance of Construction of Three-lane Grade Separator (with Approach Road) on NH-58 located at Meerut Tiraha, Ghaziabad
- Detailed investigations of Krishak Setu over river Damodar at Burdwan (West Bengal) and repair scheme for cantilever slab of span P3-P4 on Pier P4
- Quality assurance of construction of structures of inner ring road (Phase-1) from Kuberpur to Fatehabad road in Agra, UP
- Project Monitoring and Quality Assurance Consultant for Construction of additional 2-lane Bridge Over River Hindon on NH-58E at the downstream of existing bridge Ghaziabad
- Assurance of quality construction of four bridges over Agra canal, Faridabad
- Inspection for assessment of old Yamuna bridge on SH-33 (Pilibhit–Bharatpur Road) at Mathura
- Assessment of load carrying capacity of the bridge at RD 7.150 km over Agra canal in Faridabad
- Assessment of damages in distressed span P1-P2 (Outer Carriageway) of bridge on 4-lane divided carriageway connecting NH-24 and NH-28 around Lucknow City using NDT and to suggest remedial measures
- Detailed Study on Seven spans of Grade Separator in Km 9&10 (Govt. Polytechnic Junction) in Lucknow City, UP
- Quality Assurance of Construction of structures of Inner Ring Road (Phase-2) Fatehabad Road to Deori Road in Agra
- Visual Inspection of twenty-five flyovers in Delhi
- Structural Health Monitoring of Second Thane Creek Bridge, Mumbai

- Assurance of quality construction of four numbers of two-span bridges over Agra canal in Faridabad
- Project Monitoring and Assurance of Quality Construction of Additional Two-lane bridge over river Hindon on NH58E in Ghaziabad
- Project Monitoring and quality assurance of construction of a three-lane grade separator on NH-58 near Meerut Tiraha, Ghaziabad (UP)
- Evaluation of Condition of Ranjit Singh Flyover Connecting Barakhamba Road and Mata Sundri Mandir, Delhi
- Evaluation of quality of construction of Two 4-lane bridges and one 6-lane bridge across Agra Canal at Ch. 10.150, 13.300 and 30.118 in Faridabad
- Inventory and Condition survey of Delhi-Gurgaon Section of NH-8 Accessed Controlled Six/Eight lane Highway from Rao Tula Marg Junction (Ch. 14/300) to Narsingpura (Ch.42/000)
- Instrumentation scheme, review of data observed during instrumentation and suggestion of remedial measures for three bridges under Lunding-Silchar B.G. Rail line in the state of Assam
- Load Testing of Gheroli Bailey Bridge in Betalghat Block, Nainital, Uttarakhand
- Investigations on R.O.B. at Sambhua Crossing at Km. 18+872 of Kanpur-Hamirpur Highway (NH-34)
- Inspection during Strengthening work on Farakka Barrage, West Bengal
- Investigations on distressed Aishbag ROB at Lucknow
- Detailed Inspection of Grade Separator at Rani Jhansi Road, Delhi
- 3rd Party Quality Audit for H.L. Bridge over River Gurupriya near Janbai in the district of Malkangiri, Odisha
- Assessment of Compressive Strength of Concrete of RE Facia Panels of Chandikhole - Jagatpur- Bhubaneswar Section on NH-5 from Km 417.00 to Km 418.00 and from Km 0.000 to Km 62.000 in the state of Odisha
- Visual inspection of “Upgradation of roads from Nagapattinam to Kattumavadi & New bypass roads at Nagapattinam, Thiruthurai pundi and Muttupet-ROB at Km8/4 of Nagore-Nagapattinam-Tuticorin road”
- Third party quality Assistance in Construction of two bridges over Agra Canal at Chainage Km 6.800 and Chainage Km 28.000 near Faridabad
- Assessment and rehabilitation scheme for Shastri bridge across Ganga river in Mirzapur
- Extraction and Testing of Concrete Cores from Control Room Building at Bhuj

### **iii. Structural Safety Audit**

- Structural Safety Audit of Grade Separator at Rani Jhansi Road in Delhi
- Structural Safety Audit of Four-laning of Ludhiana to Talwandi section of NH 95 from Km. 92.00 to Km.170.00 in the state of Punjab executed on BOT (TOLL) on DBFOT Basis under NHDP Phase-III
- Structural Safety Audit of Four/Six - Laning of Gandhidham (Kandla) – Mundra Port section of NH-08 (Extn) from Km. 0.000 to Km. 71.400 in the state of Gujarat under NHDP Phase-III through PPP on Design, Finance, Built, Operate and Transfer (DFBOT) Basis
- Structural Safety Audit of 2.26Km long Elevated 2-lane Flyover in the city of Agartala
- Safety Audit of Advertisement structures of DND Flyway
- Technical audit of six-lane elevated road from Delhi-Ghaziabad border to Ghaziabad
- Technical Audit of “Construction of 2.26Km long Elevated 2-lane Flyover with R.E. Wall, ramps, approaches including bridge across river Howrah and at grade C/W along both side from Drop Gate to Fire station via Battala Chowk in the city of Agartala”
- Assessment of Structural Safety of EWS Pratap Vihar Multi-storeyed Housing Complex of Ghaziabad Development Authority using NDE