



**Outreach & Dissemination Services Office
CSIR – Central Building Research Institute
Roorkee – 247667 (UK)**

**Skill Development Programme on
'Retrofitting & Rehabilitation of RCC Structures'
September 23-27, 2024**

A five-day skill development program organized by Outreach & Dissemination Services at CSIR-CBRI, Roorkee, on "Retrofitting & Rehabilitation of RCC Structures" was held from September 23-27, 2024, for engineers of COAL India Ltd., CMPDI (a Mini Ratna company) in Ranchi, Jharkhand. The event was fully sponsored by the Central Mine Planning & Design Institute Limited (CMPDI) and was organized under the aegis of the CSIR-Integrated Skill Initiative. This skill development program aims to enhance the technical knowledge and practical skills of engineers, architects, and construction professionals in strengthening existing reinforced concrete structures. The program covers advanced techniques for assessing the structural integrity of aging buildings, identifying vulnerabilities, and applying appropriate retrofitting methods to improve seismic resilience, durability, and safety. Participants will gain hands-on experience in the latest materials, technologies, and design strategies for rehabilitating RCC structures to meet modern standards, ensuring long-term sustainability and performance. This initiative is vital for mitigating risks in infrastructure and extending the lifespan of critical civil structures.

The program coordinator Er. Ashish Pippal, Senior Scientist and Skill Nodal, warmly welcomed the participants, dignitaries on the dais, and fellow scientists and staff members to the program. In his address, he highlighted the pivotal role CBRI plays in strengthening the foundation of infrastructure projects across India since its establishment in 1947, contributing significantly to the nation's development. He also emphasized the ongoing collaboration between Coal India and CBRI, focusing on innovative solutions for infrastructure challenges. Er. Pippal provided an overview of the five-day training program, outlining the key activities and sessions designed to enhance participants' understanding and practical knowledge in retrofitting and rehabilitation of RCC structures, ensuring a comprehensive learning experience.

Prof. R. Pradeep Kumar, Director of CBRI, inaugurated the Skill Development Program in the presence of esteemed guests, including Sh. Nadeem Ahmad, Head ODS, Dr. P.C. Thapliyal, Dr. C.S. Meena, Dr. Tabish Alam, Dr. Rajkumar, Dr. Naveen Nishant, and other dedicated team members. In his opening remarks, Prof. Pradeep Kumar warmly welcomed all participants, as well as the scientific and support staff. He introduced each participant individually, fostering a sense of community and collaboration. Prof. Pradeep Kumar encouraged the attendees to fully immerse themselves in the learning process, emphasizing the importance of continuous skill development in advancing their careers and contributing to innovative solutions in retrofitting and rehabilitation of RCC structures. His motivational words set a positive tone for the entire program.

Sh. Nadeem Ahmad spoke about the outreach and dissemination initiatives undertaken by the organization, highlighting the importance of skill training programs and various related activities. He emphasized how these programs are designed to enhance knowledge, foster technical expertise, and expand the impact of CBRI's work to a broader audience. At the conclusion of

the inaugural session, Er. Ashish Pippal delivered the vote of thanks, expressing his heartfelt gratitude to all the dignitaries, participants, and staff members for their valuable presence and contributions.

A total of 15 technical sessions were delivered by CBRI's scientists, covering a wide range of topics essential for professionals in the field of construction and infrastructure rehabilitation. These sessions included subjects such as construction cost management and recent trends in DPR (Detailed Project Report) preparation, repair and retrofitting of heritage structures, and the use of case studies to highlight real-world applications. Participants also received demonstrations of NDT (Non-Destructive Testing) instruments, along with sessions on the repair and restoration of land connectivity in slope areas, damage assessment, and the design and planning of retrofitting measures for buildings and foundations. Other key topics included the assessment of corrosion and its prevention, repair of building services, the use of Design Builder software for green retrofitting, building bye-laws, and the application of geo-synthetic reinforced slopes and walls for infrastructure development. These sessions provided a comprehensive and practical learning experience for all attendees. The program featured site visits, including a trip to a demonstration construction park and damaged houses.

The program included a dedicated session for discussing the presentation of reports prepared by the participants. During this session, each participant presented their findings, insights, and recommendations based on the knowledge gained throughout the training. The training program ended with a feedback session, an open discussion, certificate distribution, and a valedictory ceremony. In the final session, participants had the chance to reflect on their experiences and share the knowledge they acquired during the training.

List of Participants

S. No.	Name, Designation & Address	Mobile No.
1.	Sh. V. M. Kumar SM (Civil), CMPDI HQ, Ranchi	8055844564
2.	Sh. Aditya Telang DM (Civil), CMPDI RI-II Dhanbad	7038636256
3.	Sh. Ramswaroop Khileri DM (Civil), CMPDI HQ, Ranchi	8789488381
4.	Sh. Navin Kumar DM (Civil), CMPDI HQ, Ranchi	9199113624
5.	Sh. Bhaskar Tiwari DM (Civil), CMPDI RI-III, Ranchi	7254982466
6.	Sh. Paramjeet Singh Mgr. (Civil), CMPDI RI-I, Asansol, (WB)	8637843965
7.	Sh. Ajay Manohar Chhangani DM (Civil), CMPDI RI-IV, Nagpur	9413011626
8.	Sh. Nikhil R. DM (Civil), CMPDI RI-V, Bilaspur	9479001790
9.	Sh. Sunil DM (Civil), CMPDI RI-VI, Singrauli (MP)	9860290095
10.	Sh. Sourabh Panda DM (Civil), CMPDI RI-VII, Bhubaneswar	9556349127

Glimpses of Programme



Inaugural Session



Group Photo






Lab Visit



Certificate Distribution

Course Content

 <p style="text-align: center;">Training Programme on “Retrofitting & Rehabilitation of RCC Structures” Sept 23-27, 2024 Program Schedule</p> 					
Hours	Sept-23	Sept-24	Sept-25	Sept-26	Sept-27
9:30 AM	Registration & Inauguration – Director, CBRI	Recapitulation of 1 st Day	Recapitulation of 2 nd Day	Recapitulation of 3 rd Day	Recapitulation of 4 th Day
10:00-11:00		Repair & Restoration of Land Connectivity in Slopes <i>Er. Ashish Pippal</i>	Retrofitting of Foundations <i>Dr. Manojit Samanta</i>	Damage Assessment & Repair of Building Services- <i>Dr. Nagesh B. Balam</i>	Presentation of Report Prepared by Participants & Discussion
11:00	<i>High Tea Break</i>				
11:15-12:15	Construction Cost Management & Recent Trends in DPR Preparation- <i>Er. I.A.Siddiqui</i>	Damage Assessment & Designing & Planning of Retrofitting measures for Buildings <i>Dr. Ajay Chourasia</i>	Assessment of Corrosion & it's Prevention & Mitigation- <i>Dr. P.C.Thapliyal</i>	Use of Design Builder Software for Green Retrofitting- <i>Dr. K.S.Kulkarni</i>	Presentation of Report Prepared by Participants & Discussion
12:15-13:15	Repair & Retrofitting of Heritage Structures <i>Dr. Debudatta Ghosh</i>		Detailing of Drawings- <i>Er. Sugam Kumar</i>	Building Bye-Laws <i>Ar. S.K.Negi</i>	Feedback, Discussion & Valediction
13:15	<i>Lunch Break</i>				
14:30-15:30	Case Studies <i>Er. Aashish Kapoor</i>	Damage Assessment & Designing & Planning of Retrofitting measures for Buildings <i>Dr. Ajay Chourasia</i>	Visit to Damaged Houses <i>Ms. Namitha, Ms. Prachi & Team</i>	Geo-synthetic Reinforced Slopes & Walls for Infrastructure Development <i>Dr. Anindya Pain</i>	*****
15:30	<i>High Tea Break</i>				
15:45-17:30	Demonstration of NDT Instruments <i>Er. Jalaj Parasar & Team</i>	Visit to Demonstration Construction Park <i>Ms. Namitha</i>	Visit to Damaged Houses <i>Ms. Namitha, Ms. Prachi & Team</i>	Visit to Damaged Houses <i>Ms. Namitha, Ms. Prachi & Team</i>	*****
 <p>Proposal for Training Program for Engineers of CMPDI, Ranchi</p> 