Department of Civil Engineering
Indian Institute of Science
Bangalore

DST – Fund for Improvement in S&T Infrastructure (FIST 2000)

Brief Outline of the Department

The Department of Civil Engineering of the Indian Institute of Science was established in the Year 1950 and has grown over the years into one of the finest centres of advanced research and training in the field of Civil Engineering. The department has three major areas of activity namely, Geotechnical Engineering, Hydromechanics and Water Resources Engineering and Structural Engineering. Degree programs leading to Ph.D., and M.Sc.(Engg.) by research and M.E. by course work are awarded in the three streams. Generally, at any given time, the department has 60 research students and about 30 course students on its roles. Since inception the department has produced over 250 Ph.D.s, 160 M.Sc (Engg.) by research and trained more than 1000 M.E. Students. The department has been at the forefront of advanced research in Civil Engineering and has been very pro-active in industrial interaction and technology development.

Teaching & Research Activities

The faculty of the department has been undertaking research in frontier/emerging areas of development details of which have been furnished in the research highlights. A number of full-length journal publications have emerged based on the research work as detailed later. Over the years these research activities have led to individual recognition for many of the faculty members of the department and visibility and recognition for the department. The department is recognized as a centre for advanced study (CAS-Phase III 2003-2007) by the university grants commission (UGC). A number of advanced courses have been introduced into the post-graduate curriculum of the department over the years and these are constantly updated to reflect the latest technologies that are evolving in these areas.

Facilities Created

The funds secured under the DST - FIST (2000) program (funds sanctioned May 2002) have been utilized for procuring a 1200kN fatigue rated servo-hydraulic Material testing facility from M/s MTS USA that has been commissioned and in use since September 2003. This facility in conjunction with a strong-floor constructed

using plan grants of the institute have enabled testing of small and large structural components made from steel and other high performance cementatious composites. With the additional funds released in 2005, an existing 500 kN servo hydraulic actuating facility has been upgraded. Further, an 8 channel acoustic emission facility and walk-in humidity chamber accessories have been procured with these funds. These facilities have led to the enhancement of the laboratory based curriculum of the post graduate program (M.E.) and are pivotal in the research activities of the department. Photographs of these facilities with captions are shown in the following pages.

Photograph 1: Prestressed Concrete T-Girder Specimen Being Tested in the MTS 1200kN Material Testing Facility. Also in View is the Strong Floor Created to House the Load-Frame

Photograph 2: View of the 1200kN MTS Material Testing Facility-Load-Frame, Actuator, Control Cabin Housing the Computer Based Controller and Hydraulic Power Pack

Photograph 3: Exterior Reinforced Concrete Beam- Column Joint Being Instrumented Prior To Testing In MTS Material Testing Facility

Photograph 4: View of the Open Walk-in Humidity (40% -98% Relative Humidity) and Temperature (20-50 degree Celsius) Controlled Room Housing 1000kN Self-Reacting Frames for Studies on Creep in Concrete

Photograph 5: View of the Walk-in Humidity (40% -98% Relative Humidity) and Temperature (20-50 degree Celsius) Controlled Rooms.

Photograph 6: View Of The Air Handling Unit (Outside The Laboratory) Housing The Water Supply And Steam Generator Assembly And The Compressor And Coolant Lines For Each Humidity And Temperature Controlled Room.

Photograph 7: View of the Upgraded 500 kN Servo Hydraulic Actuating Test Facility. Also Seen Is the Control Room Housing the Computer Based Controller and the Hydraulic Power Pack

Photograph 8: View of the Upgraded 500 kN Servo Hydraulic Actuating Test Facility. Also Seen is the Computer Based 8-Channel Acoustic Emission Facility

For Further Details Contact:

Professor P.P. Mujumdar Head / Coordinator
Department of Civil Engineering
Indian Institute of Science, Bangalore-560012

Telephone No:+80-22932323 (O)+80-23602668 (R)
FAX No: +80-23600404 / 23600683
E-mail ID: Chairman@civil.iisc.ernet.in