



P K M Educational Trust[®]

R.R. INSTITUTE OF TECHNOLOGY

(Affiliated to VTU, Belagavi | Approved by AICTE, New Delhi & Government of Karnataka)

DEPARTMENT OF CIVIL ENGINEERING

NEWS LETTER- 2017

BRIDGE VOL. 2 ISSUE 1

PRINCIPAL'S MESSAGE



Process of education is a value addition to one's personality. Engineering education adds professional value to the students. For building domain in the professional education specific aspects are need to be taught which adds value and knowledge for the performance as a professional and ethically professional. Civil Engineering department of RRIT is showcasing their activities & achievements through the department newsletter "BRIDGE".

I wish them success in their endeavor!

Dr M S Bhagyashekar

HOD'S MESSAGE



To have quality education and high standard of teaching and learning process is the motto of our department. News letter reflects the appreciable efforts made by our faculty and students in academic and non academic fields.

I appreciate the editorial board for their commendable efforts in bringing about this news letter. I wish all of them bright future.

Dr D N Rao

VISION:

To become a premier department by producing technically competent Civil Engineers who can meet the needs of Industry, Society and Environment.

MISSION:

To reinforce high skill set among students and staff through innovative teaching learning process, in site training, research, consultancy and interaction with reputed technical institutes, R & D organisations and industries with a holistic concern for ethics, environment and society.

CHIEF EDITOR:

Prof Jagadeesh B N

Assistant Professor,
Civil Department.

EDITOR:

Prof Thejoropa Reddy T

Assistant Professor,
Civil Department.

DEPARTMENT ACTIVITIES

MOUS:

The department has signed Memorandum of Understanding (MOU) with following companies.

M/s. CADD Training Centre, Bangalore:

M/s. S2E (Students to Employer):

M/s. L.S. International Pvt. Ltd.

Autodesk

WORKSHOPS/CONFERENCE CONDUCTED:

FDP was conducted on “REVIT ARCHITECTURE TOOL” by Prof. Punil Kumar at Seminar Hall, Civil Block, RR Institute of Technology, Bengaluru.

This workshop attracted the participants from all teaching and non-teaching faculty of Department of Civil Engineering, RRIT Bengaluru. Around 30 participants witnessed the FDP with their presence.



GREEN CLUB:

Chief guests highlighted the need to go green in all walks of life. S Sridhar Babu stressed on how he tried to transplant various trees in his construction site. Dr. Nisar Ahmed suggested that geographic information system (GIS) can be implemented in making smarter green city. Mr. Arjun M R, Mrs. Manjula Kumar of Team lease, spoke about the awareness of green in and around us, also how we make our future generation live on this planet. Principal of RR institute of technology Dr. M. S. Bhagyashekar spoke on green awareness and how the campus and the students do their part in attain the objective of club. Samplings were planted by the guest, principal, coordinators and all faculties in the campus.



DEPARTMENT ACTIVITIES

EARTH DAY:

On the occasion of EARTH DAY on 22nd April 2017 by RRIT GREEN CLUB along with Sankalpataru organisation had organised the earth day celebration event at “Perfect Institute Of Fine Arts”, Chikkabanavara in order to create awareness among the children. About 80 children had gathered.



INDUSTRIAL VISIT:

Academical visit to water treatment plant in Thorekadanahalli, Mandya district on 16/05/2017 Tuesday, where they are treating raw water for drinking purpose and for many other uses. Raw water is received from SHIVA BALANCING RESERVIOR under gravity through 2600 mm Dia pipe line.

Water treatment plant visit gave us more knowledge about treatment and also about new technologies & its implementation. We got practical knowledge about each treatment units adopted in water treatment plant.



SURVEY CAMP:

As a part of academic extensive survey camp was held at S S Ghati from 16th Jan 2017 to 26th Jan 2017. The 5th sem students were actively learned different projects.



PARTICIPATIONS

HERITAGE DAY:

Heritage club was inaugurated on 15th April 2017 at RRIT, presided by M S Bhagyashekar. The chief guest of the event was sri Y. Raja Reddy. The Heritage club organised many events like heritage festivals, heritage dance, songs & heritage dishes. The department of Civil engineering organised Ganesha festival on account of heritage club inauguration & all the faculties & students enthusiastically participated & the event was successful.



KALATHARANGA 2K17:

The students of the department actively participated in all the cultural events of RRIT, In which Students bagged various prizes.



PROJECT EXHIBITION: MERAKI 2017

The project exhibition was organised in college level. All respective departments of our college are exhibited their different projects as done for academic fulfillment. Our Civil department students also actively participated and exhibited their projects

Best project of Civil department for academic year 2016-17.

Project Title: Papercrete an efficient use waste paper



NOTABLE PROJECT OF CIVIL DEPARTMENT FOR ACADEMIC YEAR 2016-17.

- Removal of turbidity using natural coagulants.
- Stabilization of black cotton soil using Terrazyme.
- Application of SWAT model at Lingganamakki reservoir.
- Soil stabilization using waste shredded rubber tyre chips.
- An experimental investigation of waste plastic fiber reinforced concrete with aspect ratio.
- Removal of Nitrates using low cost absorbents.

STUDENTS PLACED 2016-17

Sl. No.	Company	Student Name	USN	Package
1	Alpha 9	B D Muthappa	1RI11CV035	12 LPA- 15 LPA
		Ravi O	1RI14CV418	
2	MKT Construction	Bankerlang Meki	1RI11CV034	1.8 LPA
		S Naveen Bheempal	1RI12CV044	
		Sowjanya A	1RI13CV054	
		Wansalan Suchiang	1RI14CV426	
		Atar Islam	1RI14CV400	
		Rita Mary	1RI14CV419	
3	TCI tech org.	Ashish mankal	1RI13CV010	4 LPA
		Atar Islam	1RI14CV400	
4	Techno concepts	Lohith G C	1RI12CV027	1.8 LPA
5	Taskko solutions	Bankerlang Meki	1RI12CV044	1.2 LPA -2.4 LPA
		Issac Mathew	1RI12CV021	
		Arun Prasad M R	1RI13CV009	
		Pukar K C	1RI13CV040	
		Rakesh R	1RI13CV044	
		Shailesh kumar singh	1RI13CV051	
		Atar Islam	1RI14CV400	
		Lohith G C	1RI12CV027	

CIVIL ENGINEER:

WE MADE THE PAST,
WORKING ON PRESENT
AND PLANNING FOR FUTURE

DEPARTMENT TOPPER 2017



SWATHI R
1RI13CV055
VII 82.89%

CLASS TOPPERS 2017



ATAR ISLAM
1RI14CV400
VII 81.67%



KAUSAR ASLAM
1RI14CV408
VII 80.44%



SOWJANYA A
1RI13CV054
VII 80.22%



KEERTI JHANA
1RI14CV028
V 77.78%



NISHAN KAREL
1RI14CV049
V 75.44%



REKHA J R
1RI14CV056
V 82.89%



CHETNAN KUMAR D S
1RI15CV020
III SGPA 8.79, 80.4 %



MARUTHI M
1RI15CV048
III SGPA 8.64, 78.9 %



LAXMAN KUMAR
1RI15CV040
III SGPA 7.86, 71.1 %



PRABINA SHARMA
1RI16CV039
I SGPA 8.58, 78.3 %



AMRIT SHARMA
1RI16CV006
I SGPA 8.33, 75.8 %



DEEPESH KUMAR
1RI16CV017
I SGPA 8.33, 75.8 %

ACHIEVEMENTS

SPONSORED PROJECTS :

The students of final year got sponsored for their project work from Karnataka State Council for Science and Technology.

Sl.No	TITLE OF THE PROJECT	NAME OF THE GUIDE	SANCTIONED AMOUNT (Rs.)
1	STABILIZATION OF BLACK COTTON SOIL USING TERRAZYME	Ms. KAVYASHREE L M	5000
2	PAPERCRETE AN EFFICIENT USE OF WASTE PAPER	Mr. R S PATIL	4000
3	APPLICATION OF THE SWAT MODEL TO LINGANAMAKKI RESERVOIR	Mr. SHASHANK R	4000

PUBLICATIONS:

Kavyashree L Magadi, "Evaluation of bituminous concrete mixture properties with steel slag". Transportation research procedia, Elsevier 17(2016) 174-183.

Jagadeesh B N, Prakash M R, "Seismic response of steel structure with mega bracing system". International Journal of Engineering Science and Research Technology (IJESRT) -5(9), September 2016, ISSN 2277-9655.

Deepika R, "Perfomance study of high rise building with diagrid and hexagrid system under dynamic loadings". International Journal of Engineering Sciences and Research Technology (IJESC)- vol.6 issue no.4 pg.no. 4757-4761.

R.S. Patil, H.N. Rajakumara, "Effect of vertical ground acceleration on buildings". International Journal of Research in Advance Engineering Technologies (IJRAET), ISSN: 2347-2812, Vol.- 4, Issue – 10, 2016.

R.S. Patil etal, "Analysis and design of frame by shear wall interacting system in multi storey building". International Journal of Research in Advance Engineering Technologies (IJRAET), ISSN: 2347-2812, Vol.- 4, Issue – 10, 2016.

R.S. Patil etal, Hydrological analysis and design of check dam for water supply. International Journal of Research in Advance Engineering Technologies (IJRAET), ISSN: 2347-2812, Vol.- 4, Issue – 10, 2016.

R.S. Patil, H.N. Rajakumara, Rudraswamy M P, Effect of replacement of natural sand by blends of fly ash and bottom ash on properties of concrete. International Journal of Research in Advance Engineering Technologies (IJRAET), ISSN: 2347-2812, Vol.- 4, Issue – 10, 2016.

FACULTY CORNER:

INTERLINKING OF RIVERS



- The issue of interlinking of rivers in Karnataka as well in all parts of the country has been discussed and debated for several decades now. A number of eminent engineers, farmers and social activists have seen this as an essential solution for the problem of water scarcity in all parts of the country. Many debates, discussions, and proposals that have been put forward have clearly indicated the environmental or ecological implications of linking rivers. There are, of course, direct environmental implications in linking river systems, which would involve possibly submergence of forests and loss of biodiversity, as well as likely loss of farmland and displacement of people as well. A far more difficult issue to understand is related to the mixing of water from different rivers and their ecological implications. Unfortunately, a number of our rivers have been polluted to a point where species that existed in them earlier can no longer survive. However, in several river systems, particularly in the upper reaches, there is a rich biodiversity of life that still thrives. It needs to be investigated how interlinking of rivers would impact on the survival of species that currently exist within them.
- Interlinking of rivers is a complex issue that should not be seen purely as an engineering challenge. In fact, distribution of water from one river system to another as clearly intended in any plan on interlinking rivers, has to be seen in a much larger context – as only a part of the total challenge of managing our water resources efficiently for a population that is growing rapidly and an economy that is expanding. We necessarily need to look at every option by which the water problems of this country can be solved in an economically efficient and ecologically sustainable manner. For this reason it is important to carry out detailed scenario analysis of how demand for water would grow in the future with and without appropriate policy interventions, including pricing of water for specific purposes and laying down benchmarks for efficiency of water use in specific sectors of the economy. Climate change is another concern. In interlinking systems, it is assumed that the donor basin has surplus water that can be made available to the recipient basin. There is also a role for regulatory measures and research and development by which, for instance, in the agricultural sector it may be possible to evolve and introduce crops that are much lower in water intensity than what we have currently. The agricultural sector in particular needs some major policy interventions, since water use at the aggregate level is 80% in agriculture. It is only after a detailed analysis of future demand and scenarios related to different levels of policy initiatives and interventions that a proper assessment of any scheme to interlink would even merit attention and examination.

R S Patil

Assistant professor

Dept of civil Engineering

PLASTIC ROAD: IMPROVING THE DURABILITY AND LIFESPAN OF OUR ROADS

Plastic is one of the most commonly recycled products, with plastic materials often being recycled into bottles, bags, toys, containers, and much more. Plastic Road will reduce greenhouse gas emissions while making roads stronger and increasing their lifespan. The Plastic Road also allows for easy infrastructure upgrades, as the road is hollow, which enables city planners to run pipes and wires inside the road itself. Civil engineers say the road's hollow cavities may also be useful in draining floodwater in the event of rainstorms. When it becomes sufficiently concentrated, hydrochloric acid forms an acidic mist that can cause irreversible damage to human tissue – and if it is combined with an oxidizing agent, hydrochloric acid synthesizes into toxic chlorine gas. That means the engineering process will require stringent safety protocols in order to protect the on-site crew, and the materials engineers responsible for the plastic road will need to create a safeguard or additional waterproof layer that prevents leaching and exposure to chemicals.

Pradeep M

Assistant professor

Dept of civil Engineering

SMART CONCRETE

The world is becoming smart day by day, then why not the concrete?

The answer for this question is the invention of smart concrete, in which concrete itself acts as a sensor of strain or stress. The sensing ability is not due to the embedment or attachment of sensors. Rather, the concrete has been modified through the use of admixtures so that it becomes a sensor. Without the admixtures, the sensing ability is poor. The sensing ability is associated with the reversible change of the electrical resistance of the concrete upon deformation in the elastic regime. The concept of concrete itself functioning as a sensor has not been put forth prior to this innovation. Prior concept involves the embedding or attaching of conventional sensors (such as conventional strain gauges). This mechanism involves the discontinuous carbon fiber used as an admixture in the smart concrete bridging micro cracks and getting slightly and reversibly pulled out upon tension, thereby increasing reversibly the electrical resistivity of the concrete. The reverse occurs upon compression. Smart concrete replaces the need for embedded or attached sensors, which suffer from high cost, low durability, limited sensing volume and, in case of embedded sensors, degradation of the structural performance of the concrete. This innovation can be used in traffic monitoring, border monitoring, weighing in motion and building security. In addition, it can also be used for building facility management, i.e., the use of smart concrete to weigh each room of a building, thereby monitoring the room occupancy in real time, thereby allowing the lighting, heating, cooling and ventilation to be controlled in accordance with the room occupancy for the purpose of saving energy. this can also be used for monitoring structures.

Jagadeesh B N

Assistant professor

Dept of civil Engineering

GREEN WALLS IN HIGH RISE BUILDINGS

Green walls have been used for centuries in building construction as a means for providing shades to the building walls and the atrium. These walls also help to shield the buildings from wind. Green walls also facilitate the growth of the agricultural plants. The Hanging Gardens of Babylon, which is considered as the Seven Wonders of the World is an example of green walls in buildings. This is an original concept of a green wall in the period between 600 to 800 B.C. In the past two decades, Many different ideas like the “Bioclimatic Skyscraper”, ” Eco Skyscraper” or the “Vertical Landscape”, which are ideas related to the greenery in the building design are evolved.

What are Green Walls?

Green walls are systems in which plants grow on a vertical surface over the building facade, in a controlled pattern providing regular maintenance is termed as a green wall or vegetated facade.

The main elements that are involved in the construction of green walls are the plants, the planting media, the structures that are used to support the plants and attach them to the façade and The suitable irrigation system

Facade Supported Green Walls: Here the green wall system is supported off the facade at the area where the planting medium is not integral to the facade. This kind of system comprises of steel, wood or plastic trellises that are externally attached to the building facade. Here the climbing plants and the vines are supported with the help of horizontal, vertical or the diagonal trellis members.

Stepped Terraces: In the case of stepped terrace, the concrete floors are used that hold the plant medium that is arranged in trays, within the infill walls. These advances in steps in the upward direction. This would finally seem similar to a terrace farming. This concept is used where plants of a large variety and that require large soil is used. This would behave as a green roof and a green wall.

Cantilevering Tree Balconies: Some of the builders place a generous number of trees in the facade front area. This is achieved by constructing a projected balcony. These platforms will have the depth that is sufficient to support the root structure as well as the required amount of soil. These may have soils up to the level of the safety railing.

Benefits of Green Wall

- Geographic Location,
- Geometry of the building
- Orientation of the building
- Plant species
- Components of green wall and related system.

WHAT MAKES A BUILDING GREEN?

These are buildings that ensure that waste is minimized at every stage during the construction and operation of the building, resulting in low costs according to the experts in the technology. Green buildings are designed to reduce the overall impact of the built environment on human health and natural environment by:

- Efficiently using energy, water and other resources.
- Protecting occupant’s health and improving employee productivity.
- Reducing waste, pollution and environment degradation.

Diwakar s

Assistant professor

Dept of civil Engineering

2025: THE CIVIL ENGINEER'S WORLD -Sustainable world:

The global civil engineering profession has increasingly recognized the reality of shrinkage resources, the desire for sustainable practices and design and the need for social equity in the consumption of resources. Civil engineers have raised global expectations for sustainable and for environmental stewardship. Civil engineers have urged clients to use new, environmental friendly technologies to improve the quality of life in urban environments.

On the demographic front, the world is well on its way to a population exceeding 10 billion people in 2050. Today people occupy more space on the planet than they did 30 years ago and they are straining the earth's environment, particularly the needs for energy, fresh water, clean water and safe waste disposal. During the past 30 years, gradual global warming has profoundly affected more than half of the world's population that lives within 50 miles of coastal areas. These areas have become much harsher places to live because of sea level rise, increased storm activity, greater susceptibility to flooding. Growing population, shrinkage resources, climate change have put sustainability at the forefront of issues requiring global attention.

Thejoroopa Reddy T

Assistant professor

Dept of civil Engineering

HIGH RISE BUILDINGS WITH DIAGRID SYSTEMS

Advances in technology, change in life style of people, requirements of present population has increased the growth of tall buildings. Load action on tall building are very much different than the low rise building, lateral loads due to wind and earthquake would produce more effect on high rise buildings. Normal bracing systems will be uneconomical, if number of stories are more than 25 hence, a new grid system has been developed for construction of skyscrapers i.e. diagrid system.

In 19th century tall buildings were built in U.S.A but now a days due to people needs tall buildings are constructing everywhere this leads to sustainable development of society that is "development that meets the expectations and needs of present generation without compromising the ability of future generations to meet their requirements". According to studies and published articles in 1980, most of tall buildings were located in America and now recent studies shows that number of tall buildings and construction process is more in Asian countries, it is of about 32% and 24% in north America and Europe.

By using diagrid systems building with irregular shape like oval, round, leaning towers can be built. Major advantage of diagrid is to increase aesthetic view and maximum use of structural elements. Diagrid structures are majorly column free in both exterior and interior. Unique floor plans can be implemented clearly. But apart from advantages, for the construction of this kind of structures providing nodes or joints are complicated for that skilled labours are required if not transferring of shear load will be an issue and this will lead to failure of structure.

The behaviour of this system depends on optimum angle and base width. Diagonal angle from 63° to 75° possess better stiffness and strength. We can save percentage of steel usage up to 15% to 20% compared to normal rectangular high rise buildings.

Deepika R

Assistant professor

Dept of civil Engineering

PHOTO GALLERY



Earth Day Celebration



Ethnic Day



Our Department Class Toppers Receiving Medal from our Honorable Chairman sir



Graduation Day - 2017