



National Workshop and Review on Future of Cities @ IIT Kharagpur during October 29-30, 2015

Background

A rapid economic growth of the country over the past two decades have seen to the rise in cities and the facilities demanded by the citizens at an unprecedented scale. There is a battle being fought on rapid urbanization while another battle is brewing on ageing and inadequate infrastructure bounded by physical and fiscal constraints. Multi-hierarchical researches in interdisciplinary fields are the need of the hour to address this growing concern related to the future of urban India.

The solution to liveable cities lies in many different clusters. Planning for the urban space requires research in many broad areas, both for Greenfield and Brownfield, for inclusive and progressive development. Multidisciplinary convergence of initiatives and perspectives at different levels of hierarchy will be able to bring together the concerns of heterogeneous communities and consequently, help to ensure sustainability in urban environments.

In order to achieve liveability, the cities need to come out of its existing way of unplanned development. A considerable effort is required to ensue design ideas and developmental framework in Urban Sciences and Engineering, Urban Management and Habitat Studies, at the institutions facilitating multi-disciplinary research like the IITs, IIMs SPAs, TISS and NIDs.

Objectives

India, as a diverse country with its massive population, gives rise to a unique challenge to address the need of liveability of the urban dwellers from various socio-economic segments. *Future of Cities* aims to be a platform to identify and address the concerns related to development of urban India.

The objective of *Future of Cities* is to identify the current scenario of urban India and to enhance quality of life in cities through research and recommendations from interdisciplinary 'Schools of Thought'.



Mission Statement

With the vision of *Future of Cities*, the experts from IIT Kharagpur have identified four broad areas where ground-centric and people-centric research is an imminent need. These are:

- Planning and Policy
- Design and Development
- Habitation and Maintenance
- Governance

Specific research areas were also identified which urban India is in need of. Faculties from various departments and schools have come together to identify and address some of the major problems prevalent in urban India. The result of the identification of focuses on work gave rise to specific research areas.

Research Modules and Review

The success to the program lies in the recognition of the key areas where research is required in the urban context and the timely completion of the research within the stipulated budget. **Four broad areas** of research were identified and **28 research modules** under them have been carved out to best serve the '*Future of Cities*' in India. These research modules were reviewed by external experts in March 2014 and based on their recommendation 21 modules have been initiated in April/May 2014.

A National Workshop and Review on Future of Cities is planned during October 29-30 in order to review the progress of the work during May 2014 to October 2015. The review will be carried out by External Experts. The on-going project modules to be reviewed are summarized in Table 1. The Institute has received several new project proposals for possible inclusion and support under "Future of Cities". **These new project proposals will also be presented and reviewed by External Experts during the workshop.**

Table 1: On-going Project Modules under “Future of Cities”

| No | Title | Broad Area | Team Composition |
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| 1 | Age-friendly Built Form And Infrastructure Design Model And Knowledge Networking | Design and Development | PI: Dr. Abraham George, IIT KGP Co-PI(s): Dr.Uttam Kumar Banerjee, IIT KGP Dr.Pradeep G. Yammiyavar, IIT Guwahati |
| 2 | Sustainable and Cost Effective Housing using Recycled Aggregate Based Concrete | Design and Development | PI: Dr.SudhirkumarBarai, IIT KGP Dr.Shailendra Kumar, Guru Ghasidas Vishwavidyalaya, (CU), Bilaspur |
| 3 | Engineered Cementitious Composites – A Replacement of Conventional Concrete for Sustainable Infrastructure | Design and Development | PI: Dr.NilanjanMitra, IIT KGP Co-PI(s): Dr.Shubhashish B. Majumdar, IIT KGP Dr. Swati Maitra, IIT KGP Dr.BasudamAdhikary, IIT KGP, Dr.Abhijit Mukherjee, Curtin University, Australia |
| 4 | Improvement of Safety of School Trips and Traffic Management around Schools in Urban Areas: Kolkata as a Pilot Study | Planning and Policy Habitation and Maintenance Governance | PI: Dr. Bhargab Maitra, IIT KGP Co-PI(s): Dr.Uday Shankar, IIT KGP Dr.PabitraMitra, IIT KGP Dr.Akhilesh Kumar Maurya, IIT Guwahati Dr.S.Velmurugan, Principal Scientist Traffic Engineering and Safety Division, CSIR-CRRI Dr.-Ing. Manfred Boltze, Professor, Department of Civil and Environmental Engineering, TU Darmstadt, Germany |

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| 5 | Policy Planning, Legal Assessment and Governance of Smart city | Planning and Policy / Governance | PI: Dr.IndrajitDube, IIT KGP Co-PI(s): Dr.DipaDube&Dr.Uttam Banerjee, IIT KGP |
| 6 | Improving Quality of Life of Senior Citizens in Residential Neighbourhoods in the Indian Context | and Policy Habitation and Maintenance | PI: Dr.SanghamitraBasu, IIT KGP Dr.DebapratimPandit, IIT KGP Dr.Suhita Chopra Chatterjee, IIT KGP |
| 7 | Estimation of Settlements for Design of Facilities to be Constructed Over MSW Landfills | Design and Development | PI: Dr.Debasis Roy, IIT KGP Co-PI:Dr. DeepankarChoudhury , IITB Dr.DebarghyaChakraborty, IIT KGP Dr. B.V.S. Viswanadham, IITB |
| 8 | Development of Pervious Concrete Mix Designs and Specifications for Pavement Applications | Development Habitation and | PI: Dr. Krishna PrapoornaBiligiri, IIT KGP Co-PI(s): Dr. K. Sudhakar Reddy, IIT KGP, and Dr. Swati Maitra, IIT KGP |
| 9 | Planning Recommendations for Urban Neighbourhoods to Regulate Thermal Fluxes in a Hot-Humid Climatic Region : Case Study of Kolkata | Planning and Policy | PI: Dr.Saikat Paul, &Dr.ArunChakraborty IIT KGP |
| 10 | Segmentation and Design of Bus Services in Urban India: Kolkata as a Pilot Study | Planning and Policy Design and Development Governance | PI: Dr. Bhargab Maitra, IIT KGP Co-PI(s): Dr.BiswajitMahanty, Dr.ArindamBasu, Dr.Pulak Mishra, Dr.RudraPrakashPradhan&Dr.PabitraMitra, IIT KGP. Dr.Phani Kumar Chintakayala University of LEEDS |
| 11 | A framework for improving bicyclists' accessibility to rail stations | Planning and policy | PI: Dr.DebapratimPandit, IIT KGP |

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| 12 | Assessment of socio-economic vulnerability based on a relationship between Urban Development and parameters of Physical-environmental, socio-economic and socio-cultural liability cum affordability thresholds in residential Cluster of West Bengal. | Planning and Policy Habitation and Maintenance | PI: Dr. Joy Sen Co-PI: Dr.SomnathSen, Dr. S. Chattopadhyay and Dr.Saikat Paul, IIT KGP |
| 13 | Assessment of relationship between Urban Development and Water Use, Annual rainfall vs. Runoff and Land Cover parameters in residential Cluster of small and medium towns in humid West Bengal. | Planning and Policy Habitation and Maintenance | PI: Dr.SomnathSen Co-PI: Dr. Joy Sen, Dr. S. Chattopadhyay and Dr.Saikat Paul, IIT KGP |
| 14 | Urban Governance: Sustainable Policies and Implementation | Governance | PI: Dr.MamataJenamani, IIT KGP Co-PI(s): Dr. P K J Mohapatra, Dr. B. Mahanty, and Dr.Sujoy Bhattacharya, IIT KGP |
| 15 | Pilot Plant study for solid waste treatment for IIT Kharagpur | Design and Development Habitation and Maintenance and | PI: Dr.SudhaGoel, IIT KGP |
| 16 | Management of Urban Water Supply Network: Technical, Economic, Feasibility Assessment, and Ensuring Losses Controls and Sustainability | Habitation and Maintenance | PI: Dr. A. K. Gupta, IIT KGP Co-PI(s): Dr. D. J. Sen, IIT KGP Dr. M. K.Tiwari, IIT KGP |

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| 17 | Effect of Climate Change on local sea level rise and its Impact on Coastal Areas: Kolkata Region as a Pilot Study | Habitation and Maintenance | PI: Dr.RajibMaity, IIT KGP Dr. Prasad K. Bhaskaran, IIT KGP |
| 18 | Recycled Asphalt Pavements (RAP) for City Streets | Design and Development Habitation and Maintenance | PI: Dr.KusamSudhakar Reddy, IIT KGP Co-PI(s): Dr. Krishna PrapoornaBiligiri, IIT KGP Dr. M.A. Reddy, IIT KGP |
| 19 | Governing Framework of Future of Cities- An Evaluation | Governance | PI: Dr.Uday Shankar, IIT KGP Co-PI(s): Dr. Tapas Kumar Bandyopadhyay, IIT KGP |
| 20 | Design and Evaluation of Composite Transportation Networks in a Multimodal System for Travel Demand Management in Urban Areas | Planning and Policy | PI: Dr.B.Maitra, IIT KGP CoPI: Dr.DebashishBasu, IIT BBS Dr.K.V.Krishnarao, IITB Dr.Abhijit Mukherjee, Curtin University, Australia |
| 21 | Development of a Systematic Method to enhance Road Safety in Indian Cities through Improved Accident Data Collection, Advanced Statistical Analysis and Innovative Design | Planning and Policy Design and Development | PI: Dr.SudeshnaMitra, IIT KGP CoPI: Dr.SoumyaGhosh, IIT KGP Dr. P Vedagiri, IIT Bombay, Dr. Mark King and Dr. Md. MazharulHaque, Queensland University of Technology, Dr. Adnan Hyder and Dr.Shivam Gupta, Johns Hopkins University |