

# Urban design

## Areas of collaboration

- Infrastructure: inter alia

Roads, Buildings, Water ,Power

Waste management

Drainage

- **Systems:**
  - City Planning
  - Housing
  - Transport
  - Sanitation
  - Heritage including old cities
  - Ecological Habitat and urban design ( hill cities)
  - Sustainable strategies: Green options
  - ICT , GIS and E Governance
- Capacity Enhancement
  - Trainings
  - Resource Materials

## Modalities ( Engagement between academic institutes and Development Projects)

- Specific implementation pilot projects
- Draw Research themes from live contexts.
- Trainings institutes/National Resource Centres
- Project design and appraisal
- Studies and documentation
  - Live Case studies,
  - Learning repository
- Involve students/researcher/faculty in ongoing projects to learn and create study projects
- Institute as laboratory

## Partnerships HUPA

- **Ministry of Housing and Urban Poverty Alleviation** : work with BMTPC (Building Material and Technology Promotion Council) to bridge the gap between laboratory research and field level application of cost-effective, energy-efficient & environment-friendly building materials and construction technologies.
- HUDCO chairs in different institutes for taking up the research work of HUPA.

# HUPA

- **National Resource Centres** for Housing and Urban Poverty Alleviation could be created in each IIT, with each resource centre identifying its objectives and deliverables, with funding from Ministry of HUPA. These resource centres could have as part of their mandate a building demonstration unit, where skill development for local artisans to build such houses could be imparted.
- Under the **JNNURM and RAY schemes** of HUPA, funding can be provided for the following:
  - Creating plans for in-situ development of slums, development of ideas and technology for laying infrastructure in dense slums with minimum interventions.

# HUPA

- Creating plans for redevelopment of dense heritage towns.
- Creating plans for disaster mitigation and management.
- Designing robust decentralized waste management systems and recycling of waste materials as affordable building resources
- Creating affordable housing in the Rs. 5-6 lacs range.
- Creating plans for industrialisation of affordable housing for large-scale implementation

# HUPA

- **GIS** based data creation of building stock.
- **Peri** urban areas in metro need framework for infrastructure
- Quick rehabilitation housing after natural/man-made hazards.
- Management of smart cities in future
- IITs/SPAs would submit suitable proposals to the HUPA.

DMICDC

DMICDC's Contributions



Value Addition to Institutions

Project knowledgebase

Improvement in knowledge regarding new developments in India

International best practises

Improvement of subject knowledge of students

State of art international level planning, design & engineering

Improvement of subject curriculum of institutions

Interaction with world's best planners, designers, engineers, etc.

New research & developments



## Institutions' Contributions

Latest theories and research available in the field

New innovations and research in the field of construction technology

State of art research and laboratory facilities

Research & development of existing knowledgebase

Resource pool of trained manpower



## Value Addition to DMICDC

Revisiting the fundamentals of planning and design

Applied / fundamental research at a lower cost

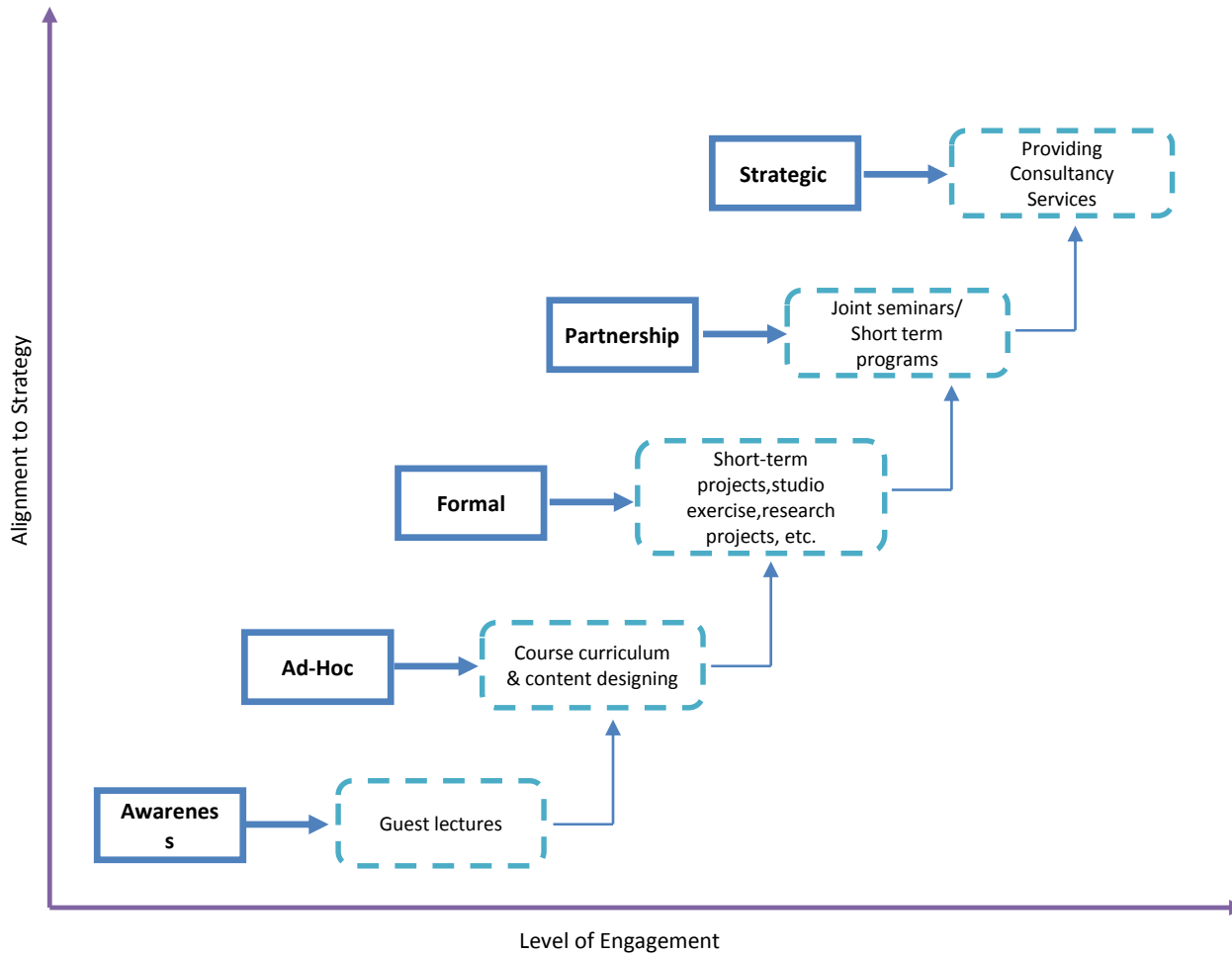
Access to highly skilled graduates, academic consultants and university facilities

Improvement in skills and knowledge base

Cost effective solution for implementation of projects

## • **Activities for collaboration**

- Awareness Activity: The representatives of DMICDC and involved consultants can provide guest lectures to students in the academic institutions on a regular basis. This would include lectures on the various latest and international standards of planning, design and engineering being adopted in DMIC projects.
- Ad-Hoc Engagement: DMICDC can provide suggestions to academic institutions for inclusion of content related to DMIC projects in the course curriculum and provide content designing and updation on a regular basis.
- Formal Agreement: There could be a formal agreement with the institutions wherein DMICDC can provide the institutions with short-term projects, studio exercise, research projects, etc. The institutions can be provided with projects having planned activity with structured identifiable objectives.
- Partnership: DMICDC can get into partnership with the academic institutions and can provide joint seminars, short-term programs for industry, professionals, executives and students.
- Strategic Alliance: DMICDC can get into strategic alliance with the academic institutions wherein the academic institutions can provide consulting services on planning, design, engineering and related issues to DMICDC.



SN	Complementarities: DMICDC			Educational Institutions	
	Subject Stream	Projects	Components	Institutions	Courses
1	Urban Planning	Development Plan of 7 nodes	Master planning, Zoning regulations, Landuse planning	SPA, IIT, CEPT	Bachelor of Planning Masters in Urban Planning PGD in Urban & Regional Plan
2	Transport Planning & Engineering	Development of Trunk Infrastructure of Development Nodes	Traffic demand forecasting, Traffic Simulation & Modelling, Planning & design of urban mass transport systems, planning and implementation of traffic management schemes, Planning and designing of roads and highways	SPA, IIT, CEPT	Bachelor of Planning, Masters in Transport Planning, M. Tech in Transport Systems Engineering.

3	Architecture & Urban Design	Development of Development Nodes & Early bird projects	Master Planning, Building design, Architectural design, Design of Iconic buildings	SPA, IIT, CEPT	Bachelor of Architecture, Masters in Architecture, Masters in Urban Design
4	Civil Engineering	Development of Trunk Infrastructure of Development Nodes	Planning and designing related to roads, utilities, building in urban areas including structural design	IIT	B. Tech in Civil Engineering, Masters in Civil Engineering

5	Material Technology	Implementation Development Nodes & Early bird projects		IIT, SPA, CEPT	Master of Building Engineering and Management, Master of Design (Industrial Design), Master in Construction Technology, M. Tech in Materials Science and Technology
6	Water Supply & Waste Water Engineering	Development of Trunk Infrastructure of Development Nodes	Planning and design of transmission and distribution network, treatments plants, pumping stations, reservoirs, etc.	IIT	M. Tech in Water Resources Engineering, M. Tech in Water and Waste Water Engineering, M. Tech in Hydraulics Engineering

SN	DMICDC			Educational Institutions	
	Subject Stream	Projects	Components	Institutions	Courses
7	Electrical Engineering	Development of Trunk Infrastructure of Development Nodes	Planning and design of transmission and distribution network, substations	IIT	B. Tech in Electrical Engineering, M. Tech in Electrical Engineering
8	Electronics & Communication Engineering	ICT Master Planning	Planning and design of ICT components	IIT	B. Tech in Electronics & Communication Engineering, B. Tech in Electronics & Electrical Engineering, M. Tech in Electronics & Communication Engineering
9	Financial Management	Financial Analysis of Development Nodes & Early bird projects		IIM, IIT	MBA (Finance), PGDM (Finance)
10	Logistics & Supply Chain Management	Early bird projects	Freight demand forecasting, Traffic Simulation & Modelling, Planning and design of logistics facilities	IIM	PGDM (Operations)

11	Project Finance	Development Nodes & Early bird projects	Financial analysis	IIM	PGDM (Finance)
12	Project Management	Development Nodes & Early bird projects		CEPT	M. Tech in Construction & Project Management
13	Environment Planning/ Engineering	Development Nodes & Early bird projects	Environmental planning, EIA studies, EMP	SPA, CEPT, IIT	M. Plan in Environmental Planning, M. Tech in Environmental Engineering
14	Economics	Development Nodes & Early bird projects	Econometric analysis, Economic IRR	Delhi School of Economics	Masters in Economics
15	Law	Development Nodes & Early bird projects	State Support Agreements, Concessions Agreements	Indian School of Law	Masters in Law



16	Railway Engineering	Development of Trunk Infrastructure Nodes & Early bird projects	Rail connectivity planning, Planning & design of MRTS, stations, railways siding, etc.	IIT	M. Tech in Civil
17	Airport Planning & Design	Early bird projects	Air traffic demand forecasting, Planning and design of airports and aerotropolis	SPA	M. Arch