



Punj Lloyd Institute of Infrastructure Management

ANNUAL REPORT

2020-21

ANNUAL REPORT OF YOUR DEPARTMENT FOR THE YEAR 2020-21

MISSION

Mission of the Department

- Create top-quality educational and training programs.
- Facilitate learning through online programs.
- Undertake research that is contextual to the Indian and developing country context.
- Develop tools and decision support systems to support the infrastructure and real estate practice.
- Undertake continuous outreach to support the sectors.
- Serve as a "Go to" place for the infrastructure and real estate sectors in India and abroad.

DEPARTMENT ORGANISATION STRUCTURE WITH TEAM COMPOSITION



DEPARTMENT BROAD LEVEL TARGETS FOR THE ACADEMIC YEAR

Research

Thought leadership in the areas of Smart Cities, project management, electric vehicles and digitalisation of infrastructure

Education

1. To popularise Advanced Management Programme for Infrastructure (AMPI) as a niche program for middle and senior management in Infrastructure and Real Estate firms.
2. To ensure a smooth conduct of the AMPI for the Co2021.

Outreach

1. To invite 5-6 faculty and experts of national repute as distinguished speakers for webinars on current topics.
2. To participate as keynote speakers and panellists in conferences and seminars at national level.

HIGHLIGHTS OF THE YEAR

Research

- 1. Electric Vehicle Roadmap to Upscaling in India:** The PLIIM is working on an applied research project related to India's electric vehicle roadmap. The project involves the following.
 - a. To identify challenges related to charging infrastructure and possible future roadblocks.
 - b. To list out the government's steps to ensure smooth roll-out of charging infrastructure on a pan-India basis.
 - c. To layout the global charging infrastructure scenario.
- 2. Proposals made to NHAI for Collaboration:** We made a set of proposals to NHAI related to applied research and training.

- Identifying NHAI's business challenges and developing solution-based on Innovative and digital technologies.
 - a. Analysis of time and cost overrun for large projects.
 - b. Use of technology to reduce the duration of projects.
 - c. Develop a solution to reduce the cost of large projects.
 - d. Developing a multi-dimensional approach for accelerated project delivery.

- Applied research and thought leadership through collaboration in applied research, covering areas such as:
 - a. HAM (Hybrid Annuity Model)
 - b. Tolling-Operation-Maintenance-Transfer
 - c. Strategy for bundling projects.
 - d. Accommodating changes in scope, drawings & utility shifting
 - e. Analysis of delays in large projects

- Proposal: NHAI–Toll Plaza Video Analytics for Vehicle Counting: PLIIM presented a business case to NHAI with the below provisions:
 - a. Conceptualise and build state-of-the-art data-driven AI solutions to accurately count the “count of vehicles” passing through the Toll Plaza.
 - b. The solution will calculate the total count of vehicles passing through a Toll Plaza on a given day.
 - c. This data will be compared against the actual count generated by the toll collection system.
 - d. The control room can take pro-active actions at the toll plaza, where there is a significant gap between the number of vehicles reported at the end of the day versus the AI solution.

3. Instructional Impact Case Studies

- Develop cases on NHAI projects, namely DND Flyway, Tolling- Operation-Maintenance Transfer and Eastern Peripheral Expressway

Education

Advanced Management Program for Infrastructure

As part of its vision, the Institute offers an “Advanced Management Programme for Infrastructure” (AMPI). The AMPI is a specialised programme blending online and on-campus learning spread over a year and seeks to develop top-level leadership in the infrastructure sector.

The Fifth offering of the AMPI commenced its first hybrid residency from 29th January to 7th February 2021 in Hotel Hyatt Residency, Chandigarh. It was a mixed residency in which 13 participants attended the class in person, and 11 participants attended it online.

Brief Details	Prominent Companies Represented
<ul style="list-style-type: none">• Cohort size: 24 students• Average Work Ex: 12.6 years• Diversity: Three women candidates• Profile: Mix of middle, senior, and top management	<ul style="list-style-type: none">• WAPCOS Limited• American Express• Amazon• KPMG• Western Railways• Maharashtra Steel• DLF Home Developers• Livspace• Aequs Aerospace



Students of Join Residency of AMPMO and AMPI Co2021 present in person for Residency 1

Exclusive Interaction with ISB Leadership

It was an interaction session with ISB Leadership about 1st AMPI (Batch 5) residency where the ISB leadership team - Prof Saumya Sindhwani (Associate Dean, ISB), Prof Chandan Chowdhury (Senior Associate Dean, ISB), Prof Pratap Sundar (Academic Director, MIGM & PLIIM), Col. Rajiv Bhargava (Associate Director, MIGM & PLIIM) and Aditya Atreya (Associate Director, ISB) interacted with the students of AMPI Co2021 & AMPMO Co2021. The agenda of the session were: Safety protocols; Peer learning during residency; Faculty interaction; Campus visits and schedule & any other questions.

Program on “Excellence in Project Leadership”

We have given a proposal for a training programme for the Department of Water Supply and Sanitation, Government of Punjab. Shri Amit Talwar IAS, Additional Secretary and Head of Department of Water Supply and Sanitation, Government of Punjab, visited our campus on 9th January 2021 & we have discussed several potential areas for collaboration with PLIIM.

Proposal for Custom-made training programs for NHAI

The PLIIM made a detailed proposal for customised training for NHAI employees. The details are provided below:

- New Joiners: Punj Lloyd Institute of Infrastructure Management (PLIIM) proposed a two-month training program for the new joiners at the Ministry of Road Transport and Highways and NHAI. The annual intake of new joiners at the Ministry is approximately 300 of which about 20% (60 employees) are deputed to NHAI for five years.
- Employees with 5-10 years' experience: PLIIM proposed a Mid-Career Training Programs for employees wherein they are trained on matters related to:
 - a. Leadership
 - b. Infrastructure Project Management
 - c. Social and Environmental Issues in Infrastructure

- d. Contract Management
- e. Infrastructure Finance
- f. Infrastructure Regulation
- g. Legal Issues and Dispute Resolution
- h. Public-Private Partnership
- i. Digital Transformation of Infrastructure Business

E- Graduation Ceremony of Advanced Management Programmes

Indian School of Business (ISB) organised the e- graduation ceremony for the Advanced Management Programmes (AMPs). 111 Students from all four programmes under the AMP umbrella graduated in the ceremony:

- a. Advanced Management Programme for Healthcare (AMPH),
- b. Advanced Management Programme for Infrastructure (AMPI),
- c. Advanced Management Programme for Manufacturing and Operations (AMPMO)
- d. Advanced Management Programme in Public Policy (AMPPP)

The ceremony was attended by the graduating students, faculty, staff, and selected board members. It was presided over by Mr. Sunil Kant Munjal, Chairman, Mohali Campus Advisory Board, and Prof. Rajendra Srivastava, Dean, ISB. Also, present were Mr. Rakesh Bharti Mittal, Chairperson, Bharti Institute of Public Policy Advisory Council, Prof. Sarang Deo, Executive Director, Max Institute of Healthcare, Prof. Chandan Chowdhary, Executive Director, Punj-Lloyd Institute of Infrastructure Management

Outreach

Speaker Sessions

1. Session on “India’s Urban Challenges”

Dr. O P Agarwal, Chief Executive Officer of World Resource Institute (WRI), delivered the talk on 19th September 2020 on “Indian urban planning challenges” and provided a few innovative solutions. He spoke about the three primary generators of pollution in cities (construction, transport, and power generation), and provided insights on how urban

planners can overcome them. His final say was that better governance and innovative planning by city planners could carry the day.

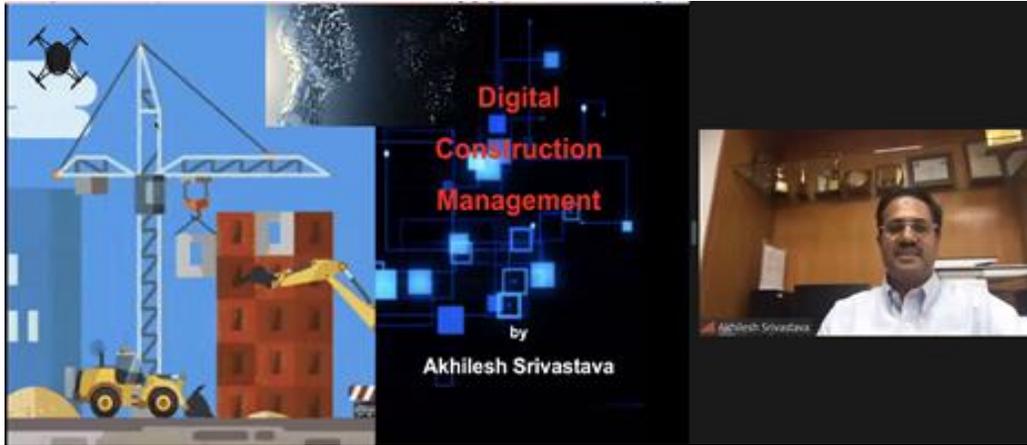


Speaker Session by Dr. O P Agarwal

2. Session on “Digital Construction Management”

Mr. Akhilesh Srivastava, Chief General Manager (IT and Highway Operations) National Highway Authority of India (NHAI) addressed 220 attendees on 1st October 2020. He spoke of various reasons behind cost overruns. He brought out that to overcome the challenges Industry 4.0 can be utilised to ensure the fusion of technologies in the physical, digital, and biological spheres. The technologies that will impact the construction industry will be AI, virtual design and construction, 3D printing, drones and robots, intelligent construction material. He also spoke at length on how digital twins will change the world of infrastructure. He said about the initiatives by NHAI, especially the data lake and data warehouses, which are being discussed in the media.

Video Link of the Session: <https://youtu.be/uOtD5ZsNXVM>



Speaker Session by Mr Akhilesh Srivastava

3. Session on “Social and Environmental Issues in Infrastructure”

Professor Jitendra Bajpai, Adjunct Faculty, Columbia University, addressed 114 attendees on 16th October 2020. Infrastructure Management is about doing the right project and doing the project right. In India, there is a lot of focus on the transport sector, railways, and the power sector. There is likely to be a lot of investment in these areas. Prof. Bajpai emphasised the four dimensions for infrastructure sustainability.

- a. Economic and financial sustainability
- b. Social sustainability
- c. Institutional sustainability
- d. Environmental sustainability

He stated that there should be a three-fold aim: to conserve resources, prevent harm and promote socio-environmental issues.



Speaker Session by Prof. Jitendra Bajpai

4. Session on “Entrepreneurship in Family Run Business”

Professor Kavil Ramachandran, Executive Director, Thomas Schmidheiny Centre for Family Enterprise, addressed 100 attendees on “Entrepreneurship in Family Run Business.” He talked about how family-run businesses have evolved across generations. In India, most family businesses are created and managed by business families. The Indian economy is dependent on activities, strategies, and inter-family relations.

The spoke of the Ansoff matrix for entrepreneurial opportunities for family businesses. He covered the fundamental differences between professional business and family business. The professor also brought out how the framing of a constitution and governance rules enables the family business’s sustenance and longevity.



Speaker Session by Professor Kavil Ramachandran

5. Speaker Session by Professor Chandan Chowdhury

Professor Chandan Chowdhury spoke at length about the AMPI and brought out the importance of upskilling in the COVID era. He started with a result of a survey conducted by him on the impact of COVID and shared the key findings. He thereafter spoke of the main characteristics of the program and its relevance to the industry. He deliberated upon the details of the curriculum, the calendar, and the pedagogy. Before fielding questions, he spoke of the importance of continued lifelong learning for an individual and the advantages of keeping oneself upskilled. In the end he appreciated the participation of the audience and the quality of questions asked.

Video Link: <https://www.youtube.com/watch?v=OAap7ipQhdl&feature=youtu.be>



Dr. Chandan Chowdhury addressing the Attendees.

6. Session on “Infrastructure Finance- Brief Overview and Market Trends

Mr. Rohit Chandak, CFO, Ayana Renewable Power spoke of the future of the infrastructure sector in India and highlighted the humungous deficit in financing projects on 19th November 2020. He explained how the National Infrastructure Pipeline report provides an excellent overview of the infrastructure sector in India. He offered a perspective on the bidding process and gave out the detailed evaluation process while bidding. He also threw light on the various stakeholders who may be involved in a project. He gave a broad overview of capital restructuring, which is a highly desirable skill in the

sector. He closed the talk by speaking about the market trends and changing scenarios like the interest in the acquisition of assets and not platforms, and the introduction of “Infrastructure Investment Trusts” as popular monetisation events.

Video Link: <https://www.youtube.com/watch?v=ci0Db1oSZIY&feature=youtu.be>



Speaker Session by Mr. Rohit Chandak

7. Session on “Macro-impact on Infrastructure”

Mr. K. Venkatesh, Former MD of L&T IDPL spoke of the macro impact on infrastructure and the micro effects on the sector on 28th November 2020. He brought out that about 5% of GDP was spent on infrastructure in the last two years. He emphasised that investment in Infrastructure projects depends on three factors.

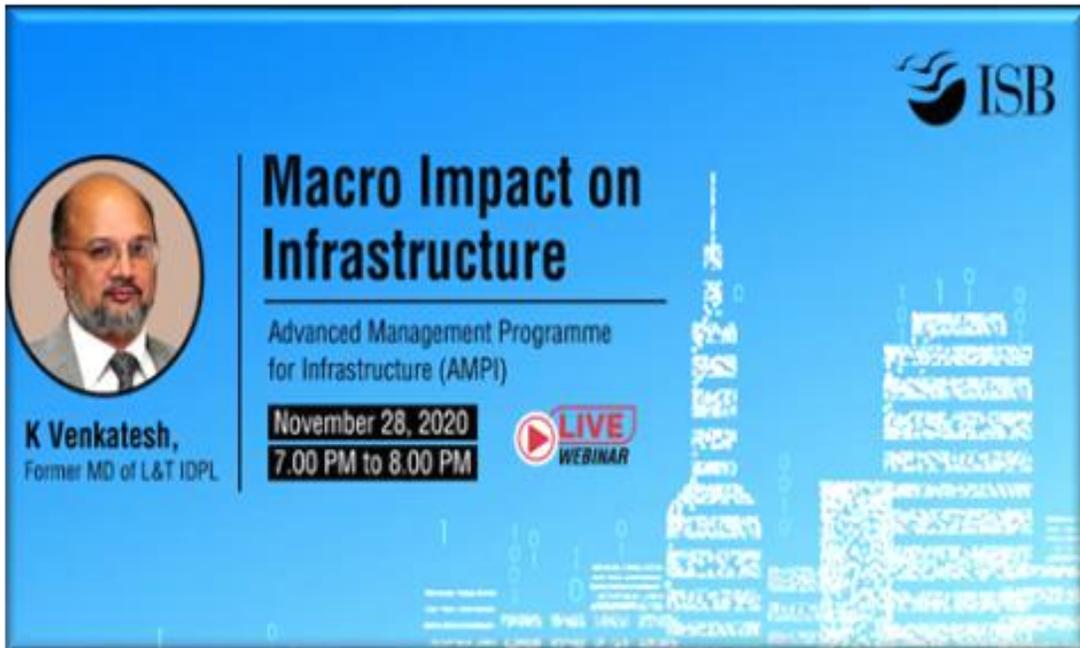
1. Budgetary allocations
2. Private sector inflow of capital (Including FDI)
3. Multilateral funding (Gets added as debt to the nation)

He explained that the infrastructure is moving from consultancy to maintenance. Companies have paused and taken stock of the fundamentals of their financials. They also are closely looking at counterparty creditors and assessing the market and looking to the future for risk management. Demand, supply, liquidity, and counterparty creditors are the main micro issues for companies.

He elucidated the financing environment in the country. Lending has become conservative, and lending agencies are strict. It results in the slowing of business, and

currently, we are in that environment. He concluded by discussing the way forward. He stated that the best indicator would come from the budget, emphasising the funding environment for greenfield projects. The focus will remain on cash flow and returns and not on growth. Companies will attempt to become more resilient and depend on equity rather than debt.

Video Link: <https://www.youtube.com/watch?v=UsdY11LxSus&feature=youtu.be>

A blue banner for a webinar. On the left is a circular portrait of K Venkatesh, Former MD of L&T IDPL. The main text reads 'Macro Impact on Infrastructure' in large white font. Below it, in smaller white font, is 'Advanced Management Programme for Infrastructure (AMPI)'. The date and time are listed as 'November 28, 2020' and '7.00 PM to 8.00 PM'. A 'LIVE WEBINAR' logo is also present. The ISB logo is in the top right corner. The background features a stylized cityscape with binary code.

Speaker Session by Mr. K Venkatesh

8. Session on “Digitalisation of Indian Infrastructure”

Mr. Akhilesh Srivastava, Chief General Manager (IT & Highway Operations) at NHAI, gave an inspiring talk on Digitisation of Indian Infrastructure to the combined class of AMPI and AMPMO Co2021 on 4th February 2021. He spoke of the impact of digitalisation on the productivity and efficiency of infrastructure projects in the country and emphasised two

key initiatives of NHA: Fastag and the NHA Data Lake. In his opinion, the Fastag has enabled a seamless traffic movement on national highways with a transparent methodology for the collection of toll taxes. The data lake initiative provides end-to-end data-based information on ongoing and completed projects, thereby reducing projects delays. His talk was appreciated a lot by the students.



Speaker Session by Mr. Akhilesh Srivastava

Action Learning Projects

The PLIIM team mentored the action learning projects of the Class of 2020. The details are as under:

- a) **Re-Envisioning of Green Retail Sector-** The Indian retail industry has emerged as one of the most dynamic and fast-paced industries due to the entry of several new players. Total consumption expenditure is expected to reach nearly US\$ 3,600 billion by 2020 from US\$ 1,824 billion in 2017. It accounts for over 10 per cent of the country's Gross Domestic Product (GDP) and around 8 per cent of the employment.

b) **Risk Mitigation in Road Infrastructure Projects** - More than 80% of Road Infra projects are bleeding due to delay in carrying out pre-construction activity i.e., Delay in handing over of encumbrance's free land leading to higher financial implication /claims and stagnation of development of country as a whole. The delays in project will be identified and the mitigation measures will be proposed.

c) **Critical Analysis of Smart City Projects PPP Model in India**

The team analysed the PPP model for Smart City projects in India. The key aspects were:

- Planned Vs Actual – Delays and Bottlenecks.
- Risk Analysis and Mitigation.
- SWOT Analysis – Favourable & Not-so-favourable factors.
- Alternative models of engagement.

d) **Developing A Solid Waste Management solution for Saharanpur**

The team carried out an in-depth analysis of the waste management solutions in the city of Saharanpur. They worked out the cost-effectiveness of a sustainable model that could be implemented in the City.

e) **Sustainable Mobility in Hyderabad Metro Rail**

The ALP team studied the factors for achieving sustainable mobility in the city of Hyderabad. The study primarily focused on the metro rail network in the city. A few parameters are as under:

- A study on mobility (through metro rail) in Hyderabad city and develop a framework to improve, adapt sustainable means and have a quantitative impact assessment for the adaption.
- The Metro Rail System has proven to be most efficient in terms of energy consumption, space occupancy and numbers transported.
- Low energy consumption – 20% per passenger km in comparison to road-based systems.
- Greater traffic capacity – carries as much traffic as 7 lanes of bus traffic or 24 lanes of car traffic (either way).

Webinars/ Seminars/ Workshops/ Conferences/ Roundtables

1. Webinar on “Advanced Management Program for Infrastructure (AMPI)”

Professor Chandan Chowdhury conducted an exclusive webinar on 29th March 2020. He spoke on the impact of COVID-19 on the industry with a particular focus on infrastructure and real estate.

2. Webinar Session on “Impact of COVID-19 on Infrastructure and Real Estate”

The webinar session on “Impact of Covid-19 on Infrastructure and Real Estate and Building Leadership Capacity” was held with NHAH on 9th April 2020. 270 participants attended it.

3. Webinar Session on “COVID-19 Pandemic on Infrastructure”

Mr. Sunil Kant Munjal, Chairman, Mohali Campus Advisory Board, took a webinar session on 24th April 2020 for institute staff and faculty at ISB. He addressed the 45 attendees on the following topics.

- a. Should “make in India” be redefined in the light of our experience during the COVID-19 pandemic?
- b. How would a place of work change post-COVID-19?
- c. How to improve business sentiment in the coming months?

4. Webinar on “Impact of COVID-19 on the Infrastructure and Real Estate Sector”

Dr. Chandan Chowdhury took a webinar session on 11th May 2020. He addressed the AMPI students on the topic, “Impact of COVID-19 on the Infrastructure and Real Estate Sector and Need for Rebooting the Leadership Skills.” The discussion was based on the following plan:

- a. Impact of COVID -19 on the industry—Our insights from recent primary research.
- b. Impact on Infrastructure and Real Estate.
- c. The problem of migrant labourers, specific examples.

Link for Impact of COVID-19 on Infrastructure (<https://www.youtube.com/watch?v=fY25-hrSqJ4&feature=youtu.be>)

5. Infrastructure SIG

The webinar session was done by ISB Alumni Real Estate & Infrastructure SIG on 22nd May 2020.

6. Webinar Session on “The Impact of COVID-19”

Dr. Pratap Sundar took a webinar session on 11th May 2020. He addressed the potential AMPI students on the impact of COVID-19 on the need for rebooting Leadership Skills.

7. Webinar Session on “Infrastructure Builders in Nature”

Professor Pratap Sundar conducted a webinar on 7th June 2020 on this topic for the students of AMPI.

8. Webinar Session on “Accelerated Digital Adoption post-COVID-19 era in the Infrastructure and Real Estate Sector.”

Professor Chandan Chowdhury conducted a webinar on 7th June 2020 on the topic for the students of AMPI.

9. Seminar on “Operating System 2.0”

Construction Industry Institute, US, AACE and ISB conducted a seminar on “Operating System 2.0: Collaborating to Transform Capital Projects Industry,” on 21st November 2020. Professor Chandan Chowdhury was a keynote speaker during the symposium.

10. Panel discussion at IISDSI’s Annual Convention

Professor Chandan Chowdhury delivered a keynote and moderated a panel discussion at IISDSI’s Annual Convention on “Building New Digital Ecosystem to Enhance Employee Engagement” on 29th December 2020.

FUTURE PLANS / TARGETS FOR NEXT ACADEMIC YEAR

Research

1. Collaborate with the Construction Industry Institute, USA and AACE India for organizing an event on “Redefining The Capital Project Business Model-Operating System 2.0 in Nov 2021.
2. Applied research on ‘Electric Vehicles’.
3. Motivate students of AMPI Co2021 & mentor their Action Learning Projects.

Education

1. To conduct a qualitative survey among alums on our curriculum of AMPI to understand the effectiveness of the program and gather input for possible future changes in our curriculum. To redesign the curriculum to be in sync with the times.
2. To ensure an attendance of 30 participants in the program commencing in Nov 2021.

Outreach

1. To invite 5-6 faculty and experts as distinguished speakers for webinars on current topics
2. To participate as keynote speakers and panellists in conferences.