ISA steel InfraBuild Summit

Transforming Construction and Infra Landscape

उत्तम प्रदेश, गतिशील विकास

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Taj Mahal, Lucknow



POST SUMMIT PROCEEDINGS REPORT

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About ISA

The Indian Steel Association (ISA) represents the voice of the major steel players in India. Founded in 2014, ` ISA's main goal is to create a conducive environment for steel production and consumption within the country. Since its establishment ISA has been dedicated to advocating the interests of the steel ecosystem at both international as well as domestic levels. As a not-for-profit organization ISA takes pride in effectively conveying the opinions and concerns of its members to all stakeholders involved in the steel industry (regulatory bodies, consumers, producers, etc). The association actively participates in policy discussions. It also contributes to decision making across multiple aspects, including public policies, regulations, raw material, sourcing, technology advancements, environmental sustainability, etc.

Industry Representation: The Indian Steel Association (ISA) consists of 16 members, including 7 executives representing steel companies, in India, 7 Affiliates and 2 Associates. Together they account for a 65% share of India's crude steel production. ISA's membership includes both public sector giants like Steel Authority of India (SAIL), and Rashtriya Ispat Nigam Limited (RINL) and private sector heavyweights such as JSW Steel, Tata Steel, Jindal Steel and Power, and ArcelorMittal Nippon Steel India.

Affiliates Names - JSW Ispat Special Products Limited, Tata Steel Long Products Limited, Jindal Stainless Limited, Arjas Steel Private Limited, ESL Steel Limited, Orissa Metaliks Private Limited, Rungta Mines Limited

Associate Names - Institute for Steel Development & Growth (INSDAG), Karnataka Iron and Steel Manufacturer's Association.

Government Collaboration: ISA collaborates closely with the Ministry of Steel and various government departments to provide a platform for industry leaders. Through innovation and collective action, the association actively influences the growth of the steel sector in India.

International Engagement: ISA is Affiliated with the World Steel Association (WSA). It regularly collaborates on initiatives and events. This international engagement helps advance the interests of steel on a scale.

Advocacy and Promotion: ISA's mission covers various issues related to steel production, consumption, and promotion. It advocates for its members interests by engaging with policymakers on matters such as laws, regulations, taxes, and foreign trade. Additionally, the association actively campaigns to raise awareness among architects, builders, engineers, and designers, about the safety and environmental benefits of steel.

Quality and Innovation: ISA is dedicated to maintaining the standards in steel production with the goal of establishing steel as a preferred choice worldwide. It serves as a platform for the iron and steel industry in India to voice shared concerns to government bodies, industry chambers, associations, and all relevant stakeholders.

Knowledge Sharing: ISA organizes conferences, webinars, and other events to advance the goals of the steel industry and raise awareness about issues impacting the sector. These include competition, environmental sustainability, labor practices, health, and safety measures as fostering innovation.



ISA envisions a conducive landscape for Indian steel production by consistently upholding its commitment to quality, productivity, competitiveness, innovation and sustainability.

Snapshot of the Summit

On the 15th of September 2023, ISA conducted its inaugural ISA Steel InfraBuild Summit on the theme "Transforming Construction and Infra Landscape," at Lucknow, Uttar Pradesh. The Summit was supported by the Ministry of Steel, Government of India with the Hon'ble Chief Minister of Uttar Pradesh, Shri Yogi Adityanath, as Chief Guest.

The chosen topics for the sessions of this summit are of particular relevance in the current context as both these sectors (construction and infrastructure) are expected to demonstrate strong growth in the future. This growth will be backed by the economic development focus and infrastructural spending by the government. This growth can help boost domestic steel consumption, thus helping to achieve the 300 MT steel production capacity by FY31 as envisioned in National Steel Policy 2017.

This inaugural version of the InfraBuild Summit was highly productive, due to wide participation from all types of stakeholders (steel industry, regulatory

bodies, policy making bodies, research institutes, academic institutions, design institutes, architects, and consultants) as well the key insights generated from the discussions.

The event was attended by 300+ participants and 50+ speakers, including top government officials, prominent industry leaders and stakeholders from the steel industry. The event also saw the participation of the Mr. Amarendu Prakash (Chairman, SAIL), Mr. Jayant Acharya (Joint MD & CEO, JSW), Mr. Ashish Anupam (MD, TATA Steel Long Products Limited), Mr. Bimlendra Jha (MD, JSP) Mr. Alok Sahay (Secretary-General and Executive Head, ISA) as well as Mr. Dilip Oommen, the President of ISA and the CEO of AM/NS India.

The ISA Steel InfraBuild Summit started on an auspicious note, with an address by the Chief Guest Shri Yogi Adityanath, the Honourable Chief Minister of Uttar Pradesh, following the welcome address by Shri Dilip Oommen. The inaugural sessions consisted of address given by Chairman of SAIL, Joint MD & CEO of JSW, MD, TATA Steel Long Products Limited), MD, JSP, Secretary-General and Executive Head, ISA. who highlighted the significant role that Uttar Pradesh aims to play in India's growth story.

A Knowledge Report prepared by Deloitte Touche Tohmatsu India LLP (DTTILLP) and ISA was also released on the occasion by Shri Yogi Adityanath, the Honourable Chief Minister of Uttar Pradesh.

The summit consisted of the following sessions:

- Steel to further the infrastructure growth and in Uttar Pradesh and Uttarakhand
- Steel in Construction of Buildings: Sustainable structure with circular economy and synergy with other materials
- Current Trends and Future Advancement of Steel Bridges
- Evolving role of steel for the future of Large Infrastructure
- Valedictory session

The summit was attended by all major players of the Steel industry, including

representations from the senior management of JSW Steel, TATA Steel, SAIL, JSL, AM/NS, RINL, Rungta Steel, Arjas Steel, Vedanta, JSL as well as senior officials from Government of India. Government of Uttar Pradesh, and Ministry of Steel.

The event also saw participation from various stakeholders such as L&T, Skeleton Consultants, Goodluck India, Interarch Building Products, Ircon International limited and TPF Engineering. Also in attendance were top academicians from prestigious institutions such as IIT Bombay, as well as a full house from various large media groups.

Going ahead, Indian Steel Association (ISA) plans to organize the ISA Steel InfraBuild Summit in key cities across India. Such summits will serve as a platform for stakeholders to explore the latest trends and developments in the construction and infrastructure sectors and promote the use of steel in these sectors.



Key Speakers and Dignitaries

1. Shri Yogi Adityanath, Chief Minister of Uttar Pradesh (Chief Guest)
2. Shri Nand Gopal Gupta, Cabinet Minister, Government of Uttar Pradesh, for Industrial Development, Export Promotion, NRI, Investment Promotion (Guest of Honour)
3. Shri Durga Shankar Mishra, Chief Secretary, Government of Uttar Pradesh
4. Shri Manoj Kumar Singh, IAS, APC, Government of Uttar Pradesh
5. Shri Abhishek Prakash, Secretary, Infrastructure & Industries Development Dept. Uttar Pradesh, and CEO - Invest Uttar Pradesh
6. Shri Awanish Kumar Awasthi, Advisor to Hon'ble Chief Minister of Uttar Pradesh
7. Shri Abhijit Narendra, Joint Secretary, Ministry of Steel, GoI
8. Mr. Dilip Oommen, President ISA and CEO AM/NS India, Executive VP ArcelorMittal
9. Mr. Amarendu Prakash, Chairman, SAIL
10. Mr. Jayant Acharya, Joint MD and CEO, JSW
11. Mr. Prabhat Kumar, Vice President - Marketing & Sales (Flat Products), Tata Steel Limited
12. Mr. Ashish Anupam, Managing Director, Tata Steel Long Products Limited
13. Mr. Bimlendra Jha, Managing Director, Jindal Steel & Power
14. Mr. Vinay Shroff, CMO, JSW
15. Mr. Ranjan Dhar, Chief Marketing Officer, AM/NS India
16. Mr. Sanjay Agarwal, Executive Director Marketing, SAIL
17. Mr. Sushil Kumar Pradhan, CMO, Jindal Steel & Power
18. Mr. Atul Bhobe, Managing Director, TPF Engineering
19. Er. Dr. Abhay Gupta, Director, Skeleton Consultants Private Limited

20. Mr. Ved Kumar Dudeja, Vice Chairman, Rail Land Development Authority
21. Mr. Alok Sahay, Secretary-General and Executive Head, ISA
22. Dr. Shailesh Kr. Agrawal, Executive Director, Building Materials & Technology Promotion Council
23. Mr. Jay Shah, Director, Access Architect
24. Mr. Rakesh Surana, Partner, Deloitte India (DTTILLP)
25. Mr. Rajib Maitra, Partner, Deloitte India (DTTILLP)
26. Mr. Manish Garg, CEO, Interarch Building Products
27. Mr. Ram Agarwal, Director, M/S Goodluck India Limited
28. Dr. Meera Raghunandan, Assistant Professor, IIT Bombay
29. Mr. Chittaranjan Senapati, Head of Steel Procurement, L&T Construction
30. Mr. Shiladitya Chanda, Assistant GM (C&S), INSDAG
31. Mr. M. M. Ghosh, INSDAG





Chief Minister's Address

ISA was proud to host Shri Yogi Adityanath, Hon'ble Chief Minister of Uttar Pradesh as the Chief Guest. Shri Yogi Adityanath welcomed the participants wholeheartedly to Lucknow and addressed them in his Keynote speech. He thanked the organizers for a well-organized ceremony and was happy that ISA had chosen Uttar Pradesh as its venue, noting that Uttar Pradesh is currently one of the most promising states in India. He highlighted some key facts about Uttar Pradesh and its suitability for attracting steel-based investments.

Being the most populous state with a population of 25 Crore Indians, Uttar Pradesh represents a significantly large labor market: with laborer's coming from other neighbouring states as well as countries. Therefore, it can be a promising destination for the steel industry.

Uttar Pradesh shares its boundary with 8 states and 1 country and thus acts as a trade hub, making it an ideal hub for the domestic and international players.

Shri Yogi Adityanath also highlighted the significant infrastructure development undertaken by the Uttar Pradesh govt in the last six years. Uttar Pradesh is now a state of expressways, boasting of 13 expressways. With increased connectivity, trade with neighbouring states have been made easier. Some of the key expressway projects include:

- Purvanchal Expressway that has shortened the travel time between Lucknow and Patna to just 5 hours.

- Bundelkhand expressway that has shortened the travel time between Chittrapurna Yatra to Delhi to 5 hours.

- Ganga Expressway is under implementation, which would make a usual 15-hour journey from Meerut to Prayagraj possible in only 6 hours.

Uttar Pradesh has made a giant leap in the Ease of Doing Business index, moving from 12th place to 2nd place in the last year.

The state is also rapidly expanding its rail and air connectivity infrastructure through a gamut of infrastructure projects. Uttar Pradesh is at the intersection of both the eastern and the western freight corridor of India. With upcoming rail hubs and a multimodal logistical park in Dadri and other sections of the state, rail trade and routes are also set to expand. In terms of air connectivity, the state already has 9 airports and plans to expand to 21 airports (which will include 5 international airports).

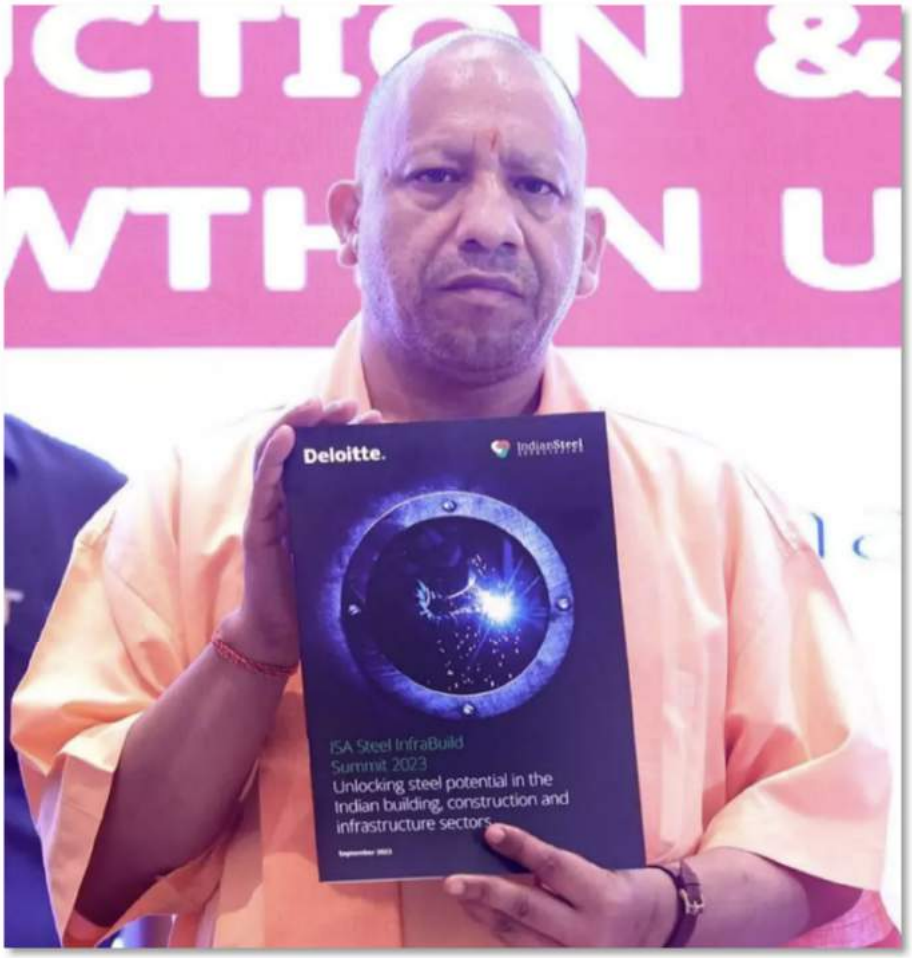
In terms of the building and construction sector, Uttar Pradesh has also led by example providing housing (under the Housing For all Scheme) to over 55 Lakh citizens.

With an ambitious goal of growing the GSDP to 1 trillion dollars, Uttar Pradesh aims to becoming the growth engine of India's progress story. The Chief Minister concluded his

address by assuring his support for all future investments and congratulating all present toward the commencement of the session.

Shri Yogi Adityanath then unveiled the Knowledge report as prepared by Deloitte India (DTTILLP) in collaboration with ISA.

Shri Yogi Adityanath, Hon'ble Chief Minister, Govt. of Uttar Pradesh releasing the Knowledge Report on "**Unlocking Steel Potential in the Indian Building and Construction Industry."**



Shri Yogi Adityanath, Hon'ble Chief Minister, Govt. of Uttar Pradesh





Inaugural Session: Gatisheel Vikas of Uttar Pradesh

Other Key Speakers:

- Mr. Amarendu Prakash, Chairman, SAIL
- Mr. Jayant Acharya, Joint Managing Director & CEO, JSW

- Mr. Ashish Anupam, Managing Director, Tata Steel Long Products Limited
- Mr. Alok Sahay, Secretary-General and Executive Head, ISA
- Mr. Bimlendra Jha, Managing Director, Jindal Steel & Power

Session Highlights

The session began with a welcome address from Mr. Dilip Oommen. He highlighted the significance of the infrastructure and B&C (Building and Construction) sectors towards development of the nation, as well as the growing role of Uttar Pradesh in this scenario. Despite being one of India's largest states, UP's per capita steel consumption is less than 40 kg and presents significant growth opportunities compared to the national average of 78 kg. Uttar Pradesh is set to develop a new, model city across 35,000 acres and establish itself as a hub for expressways and international airports, ranking second in ease of doing business.

With a staggering 25 crore population, Uttar Pradesh (UP) stood out as the epicenter of potential growth, boasting a robust consumer economy and labor market. The state's remarkable rise, with a projected annual growth rate of over 20%, from 8% of the national GDP in 21-22 to 22-23, was underlined.

Uttar Pradesh (UP) also aims to boost its Gross State Domestic Product (GSDP) to $1 trillion USD with a focus on rapid advancement and sustainability. Steel plays a pivotal role in addressing construction and infrastructure challenges, accounting for 65% of steel consumption. Steel's versatility, widespread applications, adaptability, and efficiency enhance construction outcomes and fund utilization effectiveness. It significantly reduces construction time while being environmentally sustainable, emitting 40% less CO2 than conventional buildings. Speaking of steel in general, he also highlighted the fact that steel being an omnipresent force in our lives, from the humble court pin to structures on the moon. The essence of nation-building hinges on infrastructure, and steel emerges as the cornerstone for various essential needs, including steel pipes, clean water, electricity, and much more.

Key deliberations points:

- Resilient supply chain needs to be developed.
- Upskilling the existing labor force is essential.
- Advocating for increased steel usage in construction, a meager 0.3% in India currently.
- The invitation of INSDAG, a body with technical expertise, to assist with innovation and improved steel integration in designs was appreciated to lead in innovations and positive disruptions in the industry.
- Concept of establishing an infra park in Uttar Pradesh was floated—an all-encompassing cluster or park, supported by the government and industry, aimed at providing an end-to-end solution for finished steel products .

Mr. Amarendu Prakash spoke about the plans and ideas for the coming decades at SAIL. He stressed how crucial steel is for building a nation as it plays a role in areas ranging from infrastructure to meeting everyday needs. The focus was on Uttar Pradesh's potential for growth given its population and strong economy. He also posed questions about ways to use steel effectively establishing a reliable supply chain for steel and enhancing the skills of the workforce to ensure efficient utilization of this resource. This is especially relevant considering the usage of steel in Indian buildings, at present. SAIL has outlined plans to tackle these challenges.

Key Deliberation Points:

- Practical Application of Steel: Discuss strategies for promoting and enhancing the practical application of steel in construction and infrastructure projects, considering the current low utilization of steel in Indian buildings.

- Building a Robust Steel Supply Chain: Deliberate on ways to establish a strong and efficient steel supply chain, especially in the context of Uttar Pradesh's potential for growth and development.

- Upskilling Labor for Efficient Steel Usage: Explore initiatives and programs for upskilling the labor force to ensure they have the necessary skills to work with steel effectively in construction and other applications.

- Collaborative Industry and Government Initiatives: Consider the feasibility and benefits of creating an infrastructure park in Uttar Pradesh, where industry and government support can provide an end-to-end solution for sourcing materials. Additionally, discuss how technical expertise from organizations like INSDAG can be integrated into innovative steel designs and applications to facilitate growth.

Mr. Jayant Acharya, Joint MD of JSW, emphasized the immense potential in India and UP, particularly in the realm of infrastructure development. He cited the ambitious goal of making India a $5 trillion economy by 2027, with Uttar Pradesh as a cornerstone contributing to this vision by reaching $1 trillion. UP's similarity to the USA, with a larger population and a vast manufacturing base, was highlighted. Mr. Jayant Acharya underlined the importance of identifying sectors with a competitive edge, with the steel industry being a prime candidate due to its substantial market, mineral resources, manpower, and abundant iron ore reserves. While Indian players rank among the top 36 steel manufacturers globally, there were acknowledgments of deficiencies such as taxes, duties, logistics costs, and financing that need addressing.

Key Deliberation Points:

- Addressing Deficiencies in the Steel Industry: Deliberate on strategies to tackle key deficiencies such as taxes, duties, logistics costs, and financing within the Indian steel industry to create a more conducive environment for growth and competitiveness.

- Leveraging Comparative Advantage: Discuss how the Indian steel industry can capitalize on its comparative advantage to maintain and strengthen its position in the global market. Identify specific areas where this advantage can be maximized.

- Energy Transition and Sustainability: Deliberate on the industry's readiness for the energy transition, particularly focusing on renewables and low carbon emission products. Explore policies and initiatives to promote sustainable practices and innovation within the steel sector.

- Ecosystem Development for Quality and Infrastructure: Consider the creation of an ecosystem that expedites improvements in steel quality and infrastructure. Discuss how standardization can be achieved across the country to enhance the efficiency and quality of steel production.
- Academic Collaboration for Skill Enhancement: Explore the potential for collaboration between the steel industry and educational institutions to enhance curriculum related to steel and manufacturing engineering. Discuss ways to bridge the skill gap in the workforce.

- Policy Advocacy and Life Cycle Cost Analysis: Discuss the importance of policy advocacy at the state level, emphasizing the incorporation of Life Cycle Cost (LCC) analysis in decision-making. Explore how such an approach can benefit the steel industry and promote long-term sustainability.

Mr. Ashish Anupam, MD of Tata Steel Long Products, emphasized that UP, as the most populous state, cannot lag behind in India's fast-growing economy. Infrastructural development, he argued, must play a massive role in UP's growth trajectory.

Key Deliberation Points:

- Enhancing Collaboration in the Construction Sector: Discuss strategies and mechanisms to foster collaboration among stakeholders within the construction sector, addressing the lack of organization and structure in the industry. Explore how improved coordination can lead to greater efficiency and innovation.

- Promoting Ready-to-Use Steel: Deliberate on the feasibility and benefits of ready-to-use steel in construction projects to enhance efficiency and appeal. Consider the potential impact of pre-fabricated steel components on project timelines and quality.

- Leveraging Technology and Innovation: Explore the role of technology in revolutionizing the construction sector. Discuss how the application of digital tools, automation, and innovation can streamline processes, reduce costs, and make construction more efficient and competitive, akin to the automobile industry.

Mr. Bimlendra Jha's main observations revolve around the impact that the current development of infrastructure is having on the environment. They highlight the urgency, for an approach emphasizing that our current infrastructure has caused harm to the environment creating a lose lose situation for both nature and future generations. To tackle this issue the speaker stresses the importance of constructing the remaining 75% of India's infrastructure in an environmentally friendly and sustainable manner with an emphasis on using steel as the preferred material. Moreover, there is a call to decrease Indias reliance on sources such as coking coal and petrochemicals while recognizing that steel is poised to become a material for construction in the future. These insights collectively underscore the necessity for infrastructure development and a shift, towards responsible and self-reliant practices.

Key Deliberation Points:

- Environmental Cost of Current Infrastructure: Discuss the environmental consequences of the existing infrastructure development, emphasizing the need to balance immediate gratification with long-term sustainability.
- Role of Steel in Sustainable Development: Explore the critical role of steel in achieving sustainability in infrastructure development, considering its properties and applications.
- Reducing Dependency on External Sources: Deliberate on strategies to reduce India's dependence on external sources like coking coal and petrochemicals, promoting self-sufficiency and sustainability.
- The Future of Construction Materials: Discuss the potential shift away from traditional construction materials like RCC (reinforced concrete) in the future and why steel is seen as the material of the future.

S. No	Key Highlights
1.	Uttar Pradesh's rapid annual growth rate of over 20% positions it as a vital contributor to India's economy.
2.	Steel significantly reduces construction time and is environmentally sustainable, emitting 40% less CO2 than conventional materials.
3.	A resilient steel supply chain is crucial for project efficiency and reliability.
4.	Upskilling labor is essential for effective steel use in construction.
5.	Efforts are needed to increase steel usage in Indian buildings from the current 0.3%.
6.	Collaborating with INSDAG for innovation in steel integration and design is encouraged.
7.	Establishing an infrastructure park in UP can streamline material sourcing.
8.	Addressing steel industry issues like taxes, duties, and financing is essential for competitiveness.
9.	India should maximize its advantages in the steel industry, including resources and manpower.

10.	Future infrastructure should prioritize sustainability, with steel as a key material to reduce environmental impact.

S. No	Key Questions to be deliberated going forward
1.	How can Uttar Pradesh (UP) make use of its consumer economy and labor market to increase per capita steel consumption and contribute more to the GDP?
2.	What steps can be taken to establish a resilient supply chain for steel materials?
3.	Are there any specific initiatives or programs that can be implemented to enhance the skills of workers?
4.	How to create an infrastructure park in Uttar Pradesh? What benefits might it bring in terms of sourcing materials and fostering innovation?
5.	How can the Indian steel industry address challenges such as taxes, duties, logistics costs and financing?
6.	What can be the potential policies that India could adopt to reduce reliance on sources like coking coal and petrochemicals?





Session 2: Steel to further Infrastructural Growth

Session Moderator: Mr. Rakesh Surana, Partner, Deloitte India (DTTILLP)

Session Chair: Mr. Jay Shah, Director, Access Architect, Mumbai

Panelists:

- Shri Abhijit Narendra, JS, Ministry of Steel, Govt of India
- Mr. Prabhat Kumar, VP, Marketing and Sales (Flat Products) TATA Steel Ltd.
- Mr. Vinay Shroff, CMO, JSW
- Mr. V.S. Chakravarthy, Director Commercial, SAIL
- Mr. Bimlendra Jha, MD, JSP

Session Highlights

During the Session 2 of the InfraBuild summit the panel delved into the role that steel plays in infrastructure development. The discussions revolved around both innovative applications of steel and its versatility, as well as traditional applications and emerging trends.

To kickstart the discussion Mr. Rakesh Surana acknowledged the standing use of steel in infrastructure projects like highways, airports, and metro systems. These sectors have always relied on steel due to its strength and durability. Contributing to the increasing horizon of steel application, he emphasized that recent innovations in the steel industry are pushing boundaries beyond these applications. Exciting practices like prefabrication (prefab) crash barriers and cutting-edge products such as Tata Pravesh are gaining traction.

Some questions and deliberation points were brought up by him to be answered by the panel during the discussion. Some of these were:

1. Who should bear the costs associated with implementing steel applications?
2. How can design innovation be leveraged to maximize steels potential in infrastructure development?
3. What role can green hydrogen play in enhancing sustainability, within the steel industry?
4. How can we effectively translate the advantages of using steel into applications?
5. What is the current level of awareness regarding steel capabilities and its untapped potential?

6. Is there availability of types of steel to meet various infrastructure needs?
7. What are the expectations for the expansion of the steel industry in meeting infrastructure needs?

The panel was then called upon to comment on these discussion points. Shri Abhijit Narendra was called upon first for his comments.

Shri Narendra discussed the relationship between steel consumption and economic growth. As India's economy continues to grow, there is a requirement for the steel sector to respond proactively. A particular emphasis has been placed on Uttar Pradesh (UP). Shri Narendra emphasized the significance of increasing steel production capacity to align with this objective.

Currently India has an installed capacity of 160 million tons (MT) for steel production, which includes both integrated steel plants (ISP) and secondary steel production. ISPs contribute around 92 MT while secondary steel accounts for 69 MT. In the current year India produced 110 MT of steel with ISPs contributing 80 MT. This indicates that 62% of the country's steel production comes from ISPs while the remaining portion is from secondary steel production.

The Indian steel industry aims to add a capacity of 34 MT through ISPs with the goal of reaching the government's target of 300 MT. The industry predicts that it can fulfill expected demand for 7-8 years ahead. A significant amount of steel, 52 million tonnes, out of 110 million tonnes, is used in the construction industry while another 32 million tonnes are allocated for infrastructure projects. This shows how important steel is in building structures and contributes to about 35% of steel usage.

During the year 2022-23 Uttar Pradesh emerged as one of the largest consumers of steel products indicating a growing demand for steel in the state. Interestingly UPs consumption increased from 7.3 million tonnes to 9 million tonnes year on year representing a growth rate of 30%. With its infrastructure development and the presence of steel units Uttar Pradesh has become a major center for steel consumption.

To promote demand for steel it is crucial to raise awareness about its benefits in rural areas where consumption is comparatively low. Initiatives like constructing cold storage facilities and houses using steel materials in regions can help drive demand. It is important to communicate the advantages of using steel, such as life cycle costs and faster construction speed, to various stakeholders.

The session emphasized the significance of innovation, in maximizing the utilization of steel. Some key factors that enable utilization were highlighted:

Simplifying Applications: It has been suggested that the steel industry should focus on making painting and jointing processes simpler. This approach can make steel more attractive to user industries by reducing complexity.

Reducing Investment Barriers: investments with a minimum threshold can be obstacles to entrepreneurship in the steel sector. To encourage small scale enterprises, it is important to improve access to funds and credit within the ecosystem. Adopting more affordable technologies, such as innovations in rebar market lengths can help reduce costs and enhance accessibility.

Moving on to financial access, it was discussed that empowering entrepreneurs to establish small steel related ventures requires better access to credit and financial inclusion. This involves creating mechanisms that mitigate risks associated with infrastructure projects thus ensuring availability of credit and reducing barriers that discourage entrepreneurship.

The discussion was then taken into the space of Prefabrication and Rapid Construction. It also touched upon the success of Tata Pravesh in showcasing steel applications. There was consideration given to the possibility of constructing structures like hospitals using steel components, which could significantly shorten construction timelines.

Mr. Vinay emphasized the importance of support and economics, in promoting the utilization of steel. He highlighted that the strength of steel lies in its speed, sustainability, and lower life cycle costs. To foster a steel ecosystem, it is crucial to leverage these advantages.

For example, urban settings, like colleges or hospitals can greatly benefit from the fast construction capabilities of steel.

India's increasing prominence as a hub for hydro manufacturing presents an opportunity to highlight the role of steel in sustainability. The steel industry is actively innovating to address sustainability challenges. Innovations such as using steel wire nets for preventing landslides in regions demonstrate how critical environmental concerns are being addressed.

The session concluded with a discussion on identifying sectors that have the potential for utilization of steel, with a positive outlook towards new avenues that hold the key to unlocking steel potential in the country.

S. No	Key Highlights
1	Discussion on versatile steel applications, including prefabrication and Tata Pravesh.
2	Questions about cost-sharing mechanisms for steel in infrastructure projects.
3	Emphasis on design innovation for maximizing steel's potential in infrastructure.
4	Exploration of green hydrogen's role in enhancing steel industry sustainability.
5	Discussion on the current level of awareness about steel's capabilities.
6	Addressing the availability of different steel types for various infrastructure needs.
7	Relationship between steel consumption, economic growth, and demand for steel in construction.
8	India's installed steel production capacity, including integrated steel plants and secondary production.
9	Steel's critical role in construction and infrastructure projects, contributing 35% of steel usage.
10	Raising awareness about steel's benefits, especially in rural areas, to drive demand.

11	Focus on innovation to simplify applications, reduce investment barriers, and improve accessibility.
12	Empowering entrepreneurs in the steel sector through better credit access.
13	Steel's role in addressing environmental concerns, such as landslides prevention.

S. No	Key Questions to be deliberated going forward
1	What role can the Government play in bringing down the costs associated with implementing steel applications?
2	How can design innovation be leveraged to maximize steel's potential in infrastructure development?
3	How can the cost of green hydrogen be brought down to enhance sustainability within the steel industry?
4.	How can we increase the share of steel in new building constructions?
5.	What is the current level of awareness on advantages offered by steel?
6.	How to make the consumers aware of low life cycle cost of steel as a building material in preference over concrete?
7.	Is specialty steel available for various infrastructure needs?



Session 3: Steel in Construction of Buildings: Sustainable Structure with Circular Economy and Synergy with Other Materials

Session Moderator: Mr. Jay Shah, Director, Access Architect, India

Panelists:

- Dr. Shailesh Kr Agarwal, ED, Building Materials and Technology Promotion Council
- Mr. Manish Garg, CEO, M/S Interarch Limited
- Er. (Dr) Abhay Gupta, Director, Skeleton Consultants Private Limited, Noida

Session Highlights

This session delved into the various advantages that technology can play in increasing the role of steel in infrastructure, building and construction. The session was moderated by Mr. Jay Shah, Director of Access Architect India.

Mr. Jay Shah started the session by raising questions that can act as catalysts for discussions around making steel the material of choice for construction; Why choose steel for construction, what advantages does it offer, and, does it come at a cost compared to materials? These questions reflect the practical considerations decision makers face when undertaking construction projects.

The session then explored the benefits of steel. To illustrate this, the panelists examined the Washington House as an example. This remarkable structure encompasses a 201 million feet of space and serves as a prime demonstration of the advantages of using steel in construction. By opting for steel, the project achieved a 5-7% increase in floor area, while achieving completion much faster than through RCC methods. Speed became the defining factor, allowing for construction while maintaining integrity, as the success stories of hospital construction in Russia and China in just 50 days were discussed. An endeavor in Hyderabad, India, was also brought up, with the session highlighting how offsite construction capabilities offered by steel, played a role in these successes.

The mention of the Nath Dwara statue, which stands at a towering height of 351 feet, and is one of the tallest statues of Shiva in the world, highlighted the role that consistent material quality plays in large scale projects. The Washington House's sleek design, combined with its reduced weight due to steel usage made it more efficient overall. Steel's flexibility also enabled incorporating long shear walls that reduce the need for supports and allow for increased carpet area, thus ultimately adding value to the apartments. The Washington House project demonstrated that steel is not just an alternative, but a profitable one, as

shown by the recent sale of its most expensive apartment.

The Bombay Rupa Renaissance project further highlighted the advantages of steel in long span structures. With spans ranging from 10 to 11 meters this project emphasized the importance of maximizing workspace within a given area. Unlike structures where space is lost due to elements, steel provided a more efficient solution. By using steel, the constructed area decreased by 12% while saleable areas increased by 15%, thus clearly demonstrating the profitability of incorporating steel in construction projects.

While some infrastructure projects may not see benefits from an increase in carpet space, innovative solutions like AI can help optimize ventures for cheaper constructions as well as for integrating steel into existing RCC projects. By utilizing AI, construction professionals can optimize material usage for cost efficiency as well as energy efficiency, potentially reducing expenses by up to 10% compared to traditional RCC methods. This technology generates a schematic within two weeks, streamlining the construction process and saving time. Such an example was discussed by Mr. Shah, in the construction of a 120-meter tower in six months, a task that would have taken six years using reinforced concrete methods. Moreover, the project greatly benefited from the collaboration with Google AI in New York, demonstrating the potential of AI driven innovation in the steel industry. The main message conveyed was that selecting steel is not a matter of choice; it requires an understanding of why and how steel should be utilized.

Mr. Shailesh Kumar then shed light on initiatives aimed at promoting efficient utilization of steel. The Pradhan Mantri Awas Yojana at MoHUA emphasized the role of adopting technology in construction practices. The Global Housing Tech Contest held in 2019 called for technology submissions from around the world, with a number of projects leveraging steel-based construction methods. Additionally, social mass-housing projects and lighthouse initiatives further reinforced the government's dedication to promoting steel usage in construction.

Overall, it was made clear that India needs to transition from constructing buildings to manufacturing them, with steel taking center stage, with the support of the government.

The session also acknowledged certain challenges that exist in choosing steel as a material of choice. Fire resistance and corrosion emerged as concerns that require support from government policies and careful cost considerations. It was emphasized that ensuring quality through quality control (QC) processes, and addressing the welding requirements for steel structures, are vital aspects to consider. Additionally distinguishing between types of steel and enhancing aesthetics in steel constructions were deemed essential. Mr. Garg underscored the presence of facilities and factories that excel in steel production technology. However, he also emphasized that there is often a difference between the process of making steel and its final utilization in construction projects. While many professionals are well versed in using materials, there seems to be a shortage of individuals who truly understand how to design with steel. Mr. Garg called for an initiative aimed at training and developing fabricators who can produce quality final products specifically tailored for construction purposes. This would address the gap between steel production and its effective application.

Taking into account points raised during the session it became evident that the potential benefits of using steel surpass profitability and efficiency. Steel offers possibilities for innovation in the construction industry such as maximizing space, reducing construction timelines, and strengthening structural integrity. Various government initiatives, global competitions and notable projects are all aligning with the efficient use of steel. However, it is crucial to address limitations related to fire resistance, corrosion prevention, quality control measures and workforce development in order to fully unleash the potential of steel in construction.

S. NO	Key Takeaway
1	Steel's Profitability and Potential in Construction: The session focused on why steel is relevant, profitable, and holds potential in the construction industry, emphasizing its unique advantages.
2	Washington House Example: 57% Increase in Floor Area with Steel: The Washington House project demonstrated how steel can lead to a 57% increase in floor area, contributing to cost efficiency and speed in construction.
3	AI Optimization: Speeding Up Construction and Reducing Expenses: AI-driven optimization can significantly reduce construction expenses in steel-based projects, streamlining the process and saving time.
4	Efficiency and Profitability of Steel in Long Span Structures: The Bombay Rupa Renaissance project highlighted how steel led to increased efficiency by reducing constructed area and increasing saleable areas, demonstrating profitability.
5	Government Initiatives: Promoting Efficient Steel Utilization in Construction: Government initiatives such as AWAS Yojana and the Global Housing Tech Contest are promoting technology-based construction methods that leverage steel.
6	Offsite Construction Capabilities: Steel's Role in Achieving Success in Hospital Construction: Success stories of hospital construction in Russia and China in just 50 days were discussed, highlighting the role of offsite construction capabilities offered by steel.
7	Consistent Material Quality: Importance in Large-Scale Projects: The mention of the Nath Dwara statue emphasized the role of consistent material quality in large-scale projects.
8	Challenges and Limitations: Fire Resistance, Corrosion, Quality Control, and Aesthetics in Steel: The session acknowledged challenges related to fire resistance, corrosion, quality control measures, and enhancing aesthetics in steel constructions.

9	Bridging the Gap: Training Fabricators for Effective Steel Design in Construction: Initiatives were called for to train fabricators who can produce quality final products specifically tailored for construction purposes, addressing the gap between steel production and its application.
10	Addressing Limitations: Fire Resistance, Corrosion Prevention, Quality Control, and Workforce Development: It's crucial to address limitations related to fire resistance, corrosion prevention, quality control measures, and workforce development to fully unleash the potential of steel in construction.

S. No	Key Questions to be deliberated going forward
1.	How to make the architects exploit the opportunity offered by steel in construction to maximize floor area, speed, and efficiency?
2.	What are the benefits of AI optimization in construction, and how can it reduce expenses compared to traditional methods?
3.	What needs to be done to harness the potential in steel to enhance efficiency in construction of long-span structures and increase saleable areas?
4.	How can India learn global best practices to promote the use of steel in construction?
5.	How to enhance adoption of offsite steel construction in achieving rapid successes?
6.	How to address the limitations in steel construction, such as fire resistance, corrosion prevention, quality control, and aesthetics?
7.	What training scheme can be devised for fabricators to enhance effective application in construction?
8.	What innovative possibilities does steel offer in the construction industry beyond profitability, including space optimization, reduced construction timelines, and improved structural integrity?
9.	What medium-term strategy can be drawn to enhance the share of steel in construction?


• Academics:
1. Dearth of knowledge imparted in engineering schools
2. Hardly 1 or 2 courses in the curriculum
3. We produce "Concrete" engineers
4. Over the last 4-5 decades, thus, the mindset & attitude towards steel has been skewed & is generally in favour of concrete
5. Dire need to correct this ASAP by introducing Academia – student awareness
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SESSION 4

Session 4: Current Trends and Future Advancements of Steel Bridges

Session Moderator: Mr. Atul Bhobe, MD, TPF Engineering

Panelists:

- Mr. B.P. Awasthi, Principal Executive Director, RDSO
- Mr. Sushil Kumar Pradhan, CMO, JSP
- Mr. Ram Aggrawal, Director, M/s Goodluck India Limited
- Dr. Meera Raghunandan, Assistant Professor, IIT Bombay

Session Highlights

During the Steel Bridge Conference held in India, Mr. Atul D. Bhobe, the Managing Director of TPF Engineering Pvt Ltd, kicked off the session by introducing the Iron Pillar at Qutub Minar. This incredible piece of steel engineering has stood strong for 1600 years without any signs of corrosion. Mr. Bhobe brought up the challenge of finding weather-resistant steel even today, and questioned whether innovation is essential in steel bridge construction. He emphasized that artificial intelligence cannot replicate emotions, creativity or human judgment.

Moving forward, Mr. Bhobe explored the topic of enhancing competitiveness in steel bridge projects. He then further highlighted how versatile steel is for bridge applications across India. He emphasized that steel and concrete are not competitors but have their own suitable applications. To illustrate this point further, Mr. Bhobe shared projects that exemplified the cost effectiveness and adaptability of using steel. One such example he mentioned was the Amona Khandola Bridge built in Goa back in 2000, which showcased how under certain circumstances, using steel can be more cost effective than concrete. Additionally, he discussed a swing bridge constructed in 2004 featuring designed hydraulics.

The session also focused on highlighting the construction of bridges with long spans and width. An example mentioned

was the 2008 Basket Handle Bridge, which had a span of 102 meters. Another interesting project discussed was the Bandra Skywalk, which stretched over 1.6 Km and used a pile design, and which, although dismantled now, was constructed in only 100 days. The Grant Road Skywalk, featuring a single pylon strung bridge design was also presented as a concept. The Gaundal Bridge, with its span of 110 meters was also mentioned. What makes this bridge stand out was its channel that remained open for traffic. In 2020 Bhopal celebrated the completion of another engineering marvel – the Basket Handle Arch Bridge, spanning a distance of 160 meters. The Zuari Bridge completed between 2022 and 2023, with a span of 360 meters, was also brought up. This project involved on site fabrication of all 11,000 tonnes of steel using cutting edge technology and robotic units. Surprisingly, only ten workers were required on the factory floor while others operated arms – emphasizing how automation is playing an increasingly significant role in steel fabrication.

During the discussions, in West Bengal, one of the examples was the Gajoda Bridge, which is suspended over a distance of 120 meters. The remarkable transformation of Patna's Mahatma Gandhi Setu also grabbed attention as it involved replacing the existing structure with 90,000 tonnes of steel. This impressive feat showcased the use of steel in infrastructure projects.

Furthermore, there was a discussion about Mumbai's Delisle Mumbai Bridge, which stands out for its design as a road -over railway bridge. Another notable topic was the reconstruction of Mumbai's Himalaya Foot Overbridge (FOB), where stainless steel materials were utilized, and which highlights how materials and design concepts have evolved in the steel bridge industry. During the discussion, a number of challenges were brought up.

1. Education; Engineering schools have focused more on engineering leaving a knowledge gap when it comes to steel construction. There is a need to introduce awareness and education about steel in academia.

2. Codes and Standards; The existing codes and specifications have not kept Uttar Pradesh with industry advancements. In particular there is a

lack of codes for building with steel. It is crucial to involve representatives from steel manufacturing, vendors, fabricators, and contractors in code writing bodies and policymaking.

3. Industry Challenges; The industry faces hurdles such as availability of locally sourced steel materials and the necessity, for upgrading industry practices to meet implementation requirements. Moreover, there is a shortage of detailers, fabricators, and designers.

4. Innovation and Adaptation; While innovation already exists in the field of steel construction it is essential for stakeholders to collaborate on determining the types of steel for various projects. Additionally embracing technologies and practices poses challenges that need to be overcome.

The panelists then shared insights in response to these challenges.

1. From an industry standpoint the Indian government places emphasis on fostering invention, innovation, and investment. This approach has spurred demand and led to infrastructure projects. However, a critical challenge lies in translating this demand into execution. While simulation methods can streamline bridge assembly processes, skilled manpower remains indispensable. It is essential to establish training programs that prepare students for the industry and garner support from steel plants.

2. The railway and steel sectors are closely intertwined, particularly when it comes to accommodating spans and wider decks. Ensuring quality in field welding poses a challenge as the overall quality has been diminishing despite welders' qualifications. Consistent innovation is necessary to elevate the system.

3. Incorporating steel related courses into the curriculum and raising awareness are steps for driving change. A comprehensive evaluation of costs through lifecycle costing (LCC) which encompasses environmental aspects holds relevance. The development of software that aids in LCC calculations could prove advantageous. Emphasizing steels resilience in event recovery such as earthquakes should be highlighted.

4. While innovation exists within the industry collaborative efforts are required

to determine types of steel for applications. Stakeholders need to work to address challenges effectively and promote the use of steel, in construction. To sum up, it can be said that Session 4 gave us knowledge about the possibilities of using steel in construction. It presented real life projects that demonstrate the benefits and flexibility of steel. Additionally, it highlighted areas that need focus to encourage the use of steel in the construction industry. Collaboration, innovation, and education were emphasized as factors for this promotion.

S. No	Key Takeaways
1.	Cost-Effective Steel Bridge Projects: Discussion of projects like Amona Khandola Bridge highlighting steel as a cost-effective alternative to concrete for specific requirements.
2.	Versatility of Steel in Bridge Construction: Mention of Steel Composite Cable Stay Bridge, Swing Bridge, Basket Handle Bridge, and Grant Road Skywalk, showcasing steel's versatility in bridge construction.
3.	Engineering Marvels with Steel: Examples of remarkable bridges like Zuari Bridge (360 meters), Gajoda Bridge (120 meters), Gaundal Bridge (110 meters), and Basket Handle Arch Bridge (160 meters), showcasing steel's role in large-span structures.
4.	Transformation of Infrastructure: Notable projects like the transformation of Patna's Mahatma Gandhi Setu and the reconstruction of Mumbai's Himalaya Foot Overbridge using stainless steel materials.
5.	Challenges in Steel Construction: Addressing challenges related to education, codes and standards, industry practices, innovation, and adaptation in steel construction
6.	Promotion of Steel in Construction: The session highlighted the possibilities of using steel in construction and the importance of collaboration, innovation, and education to promote its use.
7.	Education Gap in Steel Construction: The session emphasized the need to address the education gap in steel construction, particularly in engineering schools, by introducing awareness and education about steel in academia.

8.	Code Development and Industry Challenges: Challenges related to the lack of updated codes and standards for building with steel were discussed. Industry challenges include the availability of locally sourced steel materials and the shortage of detailers, fabricators, and designers.
10.	Government Emphasis on Innovation: The Indian government's emphasis on fostering innovation and investment has led to increased demand for infrastructure projects. However, the challenge lies in translating this demand into execution, and training programs and support from steel plants are essential

S. No	Key Questions to be deliberated going forward
1	How to promote steel as a cost-effective alternative to concrete in bridge construction?
2	What innovative advantages can be drawn from the various successful bridge projects to showcase the versatility and potential of steel?
3	What challenges exist in designing and constructing with steel in the bridge construction industry?
4	How can engineering schools bridge the knowledge gap and introduce courses about steel in academia?
5	What steps can be taken to update and improve existing codes and standards for building with steel?
6	What are the industry challenges related to steel materials, industry practices, and workforce availability?
7	What role does skilled manpower play in successful execution of steel projects?
8	What are the challenges in ensuring quality in field welding and maintaining the overall quality of steel
9	How to bring various stakeholders in industry, government, and construction sector together to promote the use of steel in construction of bridges?


Key infrastructure investments undertaken by the Government will favorably drive steel demand in India
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Session 5: Evolving Role of Steel for The Future of Large Infrastructure

Session Moderator: Mr. Rajib Maitra, Partner Deloitte India (DTTILLP)

Session Chair: Shri Abhishek Prakash, Secretary, Infrastructure and Industries Development Dept. Uttar Pradesh and CEO, Invest UP

Panelists:

- Mr. Ved Prakash Dudeja, Vice Chairman, Rail Land Development Authority
- Mr. Sanjay Agarwal, Executive Director (Marketing), Steel Authority of India Limited
- Mr. Chittaranjan Senapati, Head-Steel Procurement, L&T Construction

Session Highlights:

The session brought together insights from a range of panelists who shared their perspectives on the evolving role of steel in infrastructure development with a focus on Uttar Pradesh (UP).

The presentation by the Session Moderator Mr. Rajib Maitra, started by highlighting the growth of infrastructure in Uttar Pradesh, supported by investments made by the government to boost economic progress. With a population exceeding 200 million and a GSDP of $260 billion, Uttar Pradesh has emerged as one of India's faster growing states. It was anticipated that steel consumption would reach 36-38 million tons out of a total of 120 million tons by FY23. Examples from Uttar Pradesh were given to illustrate this point, such as the Agra Lucknow Expressway that used 1.5 lakh tons of steel and the Purvanchal Expressway that employed 1.2 lakh tons. Additionally, it was mentioned that the upcoming Jewar International Airport would incorporate a great amount of steel. It was also emphasized that a significant portion of steel consumption in India is attributed to the infrastructure sector in Uttar Pradesh (UP). In fact, over 85% of UPs infrastructure budget is allocated to roads and railways.

The presentation also emphasized the advantages of using steel in construction due to its strength, durability, and flexibility. Examples were provided from projects like the Mercedes Benz Stadium in Atlanta, Akashi Kaikyo Bridge in Japan and Beijing Daxing International Airport, in China.

Shri Abhishek Prakash then shared insights during the session that highlighted UPs contribution towards driving steel demand in India. The states rapid growth rate of 16% and its extensive network of railroads, expressways and metro systems solidify its position within the steel industry. Additionally UPs New Industrial Investment and Employment Promotion Policy for 2022 offers incentives such as PLI (Production Linked Incentives), stamp duty exemptions and capital subsidies which further enhance its appeal to investors.

Mr. Sanjay Agarwal, from SAIL emphasized that all sectors related to large scale infrastructure are poised for growth. He mentioned how the industry is prepared to meet changing requirements and emphasized the importance of focusing on providing solutions that align with what the end consumers need.

Mr. Dudeja discussed the expected demand for steel driven by RLDA projects, which require steel due to trains operating continuously. He stressed the significance of having quality fabricators and detailers for these projects and highlighted the use of construction methods for railway stations to speed Uttar Pradesh project completion.

Mr. Chitranjan from Larsen and Toubro introduced the Statue of Unity project as an example showcasing how digital coding and technology contribute to steel usage. He emphasized the need for specifications and innovations like road construction technology and high-speed crash barriers for large infrastructure projects.

During the discussions there was talk about preferences for concrete over steel and a shift towards considering carbon footprint measurements in procurement processes. The involvement of EPC contractors in this transition was also discussed, along with recent innovations being promoted.

Shri Abhishek Prakash expressed concerns about Uttar Pradesh per capita steel consumption, emphasizing the need to address challenges such as raw material availability and skill development in construction. However, despite this low per capita consumption, currently there is an increase in demand driven by government initiatives and real estate growth.

Mr. Senapati highlighted the challenge of relying on imported higher grade steel and emphasized the importance of better sustainability practices.

In summary, the session highlighted the importance of steel in the infrastructure development of Uttar Pradesh and emphasized on its benefits; strength, durability and eco friendliness. The session also reinforced the importance of investments, skill enhancement and effective supply chain management in line with the objective of creating sustainable and innovative infrastructure.

S. No	Key Takeaways
1.	Growth of Infrastructure in Uttar Pradesh: The session emphasized the significant growth of infrastructure in Uttar Pradesh, driven by government investments to boost economic progress in one of India's rapidly growing states.
2.	Role of Steel in Indian Infrastructure: Steel plays a crucial role in India's infrastructure sector, with anticipated steel consumption of 36-38 million tons out of a total of 120 million tons by FY23. Examples of steel usage in projects like expressways and airports in Uttar Pradesh were highlighted.
3.	Strength, Durability, and Flexibility of Steel: The advantages of using steel in construction, including its strength, durability, and flexibility, were emphasized with examples from global projects such as the Mercedes Benz Stadium, Akashi Kaikyo Bridge, and Beijing Daxing International Airport.

4.	Uttar Pradesh's Contribution to Steel Demand: Uttar Pradesh's rapid growth rate, extensive infrastructure network, and industrial incentives contribute significantly to driving steel demand in India. The state's contribution to steel consumption is on the rise.
5.	Eco-Friendly Steel: The eco-friendliness of steel, thanks to its recyclability and reusability, aligns with infrastructure development goals. Notable projects in Uttar Pradesh demonstrate the role of steel in these initiatives.
6.	Quality Fabricators and Detailers: Mr. Dudeja discussed the expected steel demand driven by RLDA projects and stressed the importance of quality fabricators and detailers for such projects.
7.	Digital Coding and Technology in Steel Usage: Chitranjan from Larsen and Toubro highlighted how digital coding and technology contribute to steel usage and emphasized the need for specifications and innovations for large infrastructure projects.
8.	Preference for Concrete vs. Steel: Discussions included preferences for concrete over steel and a shift towards considering carbon footprint measurements in procurement processes, along with the involvement of EPC contractors in this transition.
9.	Challenges and Sustainability Practices: Abhishek Prakash expressed concerns about Uttar Pradesh's per capita steel consumption, emphasizing the need to address challenges like raw material availability and skill development in construction. Senapati highlighted the challenge of relying on imported higher-grade steel and the importance of improving sustainability practices.

S. No	Key Questions to be deliberated going forward
1	How to leverage steel in UP's infrastructure growth ambition effectively?
2	How to harness the eco-friendly aspects of steel, including its recyclability and reusability, in sustainable infrastructure development?
3	What might be the impact on steel demand arising out of UP's rapid economic growth?
4	How can the steel industry focus on providing solutions that align with the specific needs of end consumers in large-scale infrastructure projects
5	What might be the steel demand in RLDA (Rail Land Development Authority) projects, and how can quality fabricators and detailers contribute to their success?
6	What role does digital coding and technology play in optimizing steel usage in large infrastructure projects?
7	How can carbon footprint measurements be integrated in the purchase decision regarding concrete versus steel?
8	How can the reliance on imported steel be brought down?
9	How can the steel industry improve sustainability practices and reduce its environmental impact, especially concerning imported higher-grade steel?

INSDAG Presentation

How to Augment Consumption of Steel

Session Speaker: Mr. Shiladitya Chanda, Assistant General Manager (C&S) INSDAG

As per the presentation, steel is an eco-friendly building material that comes with a plethora of advantages, including its strength, durability, and its ability to resist corrosion, fire and pests. However, there are obstacles when it comes to its usage. These include the lack of awareness about its benefits, the initial high costs involved and the scarcity of skilled workers available. The objective of this report is to delve into the advantages of steel and examine the challenges that come with using it and propose solutions to enhance its utilization.

Steel is renowned for being a long-lasting material that can withstand loads as well as adverse weather conditions. It also boasts resistance against corrosion, fire incidents and pests. Attributes that make it a reliable choice for construction purposes. Furthermore, steel offers flexibility in terms of transportation and assembly due to its nature and cuts down on construction time. Also reduces associated expenses. Another noteworthy aspect is that steel can be easily recycled and repurposed, which helps minimize waste production while having a positive impact on the environment as well. Its versatility makes it suitable for applications such as buildings, bridges, roads, or infrastructure projects.

However, one must acknowledge the existing hurdles towards steel consumption, such as lack of knowledge about its benefits among the public and inadequate educational efforts in this regard. High initial costs pose another challenge and there is a scarcity in financing options for those interested in using steel materials for their projects. Furthermore, there is a shortage of laborers specialized in working with steel materials which hampers its usage potential when compared against competing materials like concrete or wood. Finally, inadequate infrastructure for production and transportation

logistics also contributes towards limiting the use of steel.

To tackle these challenges, we can implement solutions. One way is to introduce policy measures, like incorporating life cycle cost analysis (LCCA) into project bidding processes and establishing steel bridge standards for the Ministry of Road Transport and Highways (MoRTH). These actions can encourage the use of steel in construction projects. Additionally, offering capacity building programs and training sessions for engineers, architects and contractors would enhance their skills and knowledge in working with steel thus increasing the availability of labor. Moreover, investing in research and development initiatives can drive designs and technologies that make use of steel as a primary material thereby expanding its applications. Lastly, conducting awareness campaigns and outreach programs would educate stakeholders and the general public about the advantages of using steel in construction thus boosting demand and promoting its usage.

In summary steel is a construction material that offers strength, durability, and resistance against risks. Although challenges do exist, addressing them through policy interventions, capacity building efforts, research advancements and awareness campaigns will lead to enhanced consumption of steel and will result in infrastructure that meets both present and future demands, while ensuring safety, durability, cost effectiveness and reduced environmental impact.


VALEDICTORY SESSION
15 September, 2023 | Taj Mahal, Lucknow
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RAJIB MAITRA
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Session 6: Valedictory Session

Concluding Address: Mr. Rajib Maitra, Partner, Deloitte India (DTTILLP)

During the closing session Mr. Rajib Maitra summarized the takeaways from the ISA InfraBuild Steel Summit 2023,
by showcasing the insights as well as opportunities and challenges that emerged throughout this event.

He started by highlighting the nature of steel buildings, emphasizing that they produce 40% fewer emissions as compared to traditional structures. He emphasized on the opportunities in Uttar Pradesh, including the development of Bundelkhand New City and the improved Ease of Doing Business ranking of the state. Uttar Pradesh is especially significant due to its population and huge labor market as well as its strong trade connections and transportation network.
The industry needs to address the challenge of integrating steel designs into infrastructure projects and other challenges such as taxes, duties, and logistics costs. It

is critical to ensure a sustainable supply chain as well as investing in upskilling the workforce.

Collaboration amongst contractors, designers, government, industry, and academics is essential. He emphasized the need for steel usage and the promotion of steel with green hydrogen, and the importance of government incentives to encourage private and PSU investments.

Mr. Maitra mentioned that the industry should deliberate on who should bear the costs and explored strategies to generate demand by simplifying processes like painting and promoting prefab toilets and steel intensive housing.

Steel can help to reduce the construction time as seen from the Cancer Institute in Varanasi which was built in only five months. Processing parks may be established in metro cities to focus on value delivery in the steel industry. In the next decade, Artificial Intelligence may also be used for design and construction processes.

Mr. Maitra highlighted the importance of changing the perception of steel being expensive and discussed the need for funding training programs for both users and designers. He also mentioned the need for welding expertise training centers and capacity building in steel design to tackle the scarcity of steel engineers. Mr. Maitra further noted that there were discussions about codes and specifications, industry preference for standards and the importance of tailored research and development to meet needs. Additionally, suggestions were made regarding changes in tendering terms for projects utilizing steel in coastal areas and expanding internship opportunities for aspiring steel engineers. There is a growing need for using resilient and earthquake resistant steels and faster decision making is needed among stakeholders to select the types of steel for different projects.

In conclusion, Mr. Maitra emphasized on the significance of collaboration and government support to fully tap into the potential of steel in India’s infrastructure growth.



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