



# Jus Corpus Law Journal

Open Access Law Journal – Copyright © 2024 – ISSN 2582-7820  
Editor-in-Chief – Prof. (Dr.) Rhishikesh Dave; Publisher – Ayush Pandey

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## Rise of Real Estate Sector: Interplay of RERA Regulations and Future Technology

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Received 09 September 2024; Accepted 11 October 2024; Published 14 October 2024

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*The real estate industry has established a well-esteemed growth impelled by the interplay of RERA standard reforms, digital marketing trends, and future technology across India. This paper highlights the symbiotic relationship between the Real Estate Regulatory Authority (RERA) policies and the emerging technological advancements in the real estate industry. RERA regulations stand as a backbone for the builders, agents, and customers as they protect the homebuyers and promote transparency, adherence to timelines, and mandating project registration. This research examines in what ways the future technology, often termed as “Proptech”, is revolutionising the real estate landscape. Further, it analyses the potential solutions to overcome the challenges associated with the implementation of Proptech. The primary objective is to restore the faith of consumers by collaborating on the relationship between the RERA regulations and future technology. For consumers, Proptech offers innovative solutions like VR tours, Blockchain, and AI-powered property estimation, leading to a more efficient and informed property search experience. This study underscores the economic marketing trends shaping the real estate market. Through this paper, we ensure that there is a competitive edge in the real estate market. Articles, case laws, and journals were used to identify the limitations of the study and a small survey was also conducted. The real estate future not only depends on bricks and mortar but accounts for innovation, sustainability, and proximity. It emphasises the feeling of empowerment from the buyer’s perspective. The advanced technology helps the real estate owners to attract more customers and stand as a competition in the market. Proposals for future research are made based on these findings. Overall, the study discusses the impact of RERA in the real estate sector and the emergence of technology for the present and future in this sector in India.*

**Keywords:** *RERA, consumer protection, future technology, real estate disputes, challenges.*

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## INTRODUCTION

India's real estate sector has emerged as one of the country's fastest-growing sectors and stands as the second-largest growing sector in the country. It is to be noted that the tier II and tier III cities have been considered the real estate trendsetters after two years of the pandemic. It has set to the high standards that have continued its growth momentum from 2021 despite the global slowdown. The future of real estate markets in India is more optimistic than ever, with several new trends emerging and existing ones evolving rapidly. According to the reports and analysis, India has performed the highest level of growth in 2022 and saw the biggest sales in the top 7 premier residential markets. This great achievement has happened due to the rising awareness about home ownership and the government's affordable housing schemes, an increase in earning capacity and lifestyle changes have led to the growth of the real estate market in the country. The market has experienced favourable economic growth the major reason for this has been the reform in stamp duty, affordable housing complexes, government-aided schemes, and future technology. According to the senses, it was observed that there is an increase in GDP per capita, higher disposable income, and expanding urbanisation, leading to the largest long-term growing sector in the country.

The Interim Union budget 2024, which was released on 1<sup>st</sup> February by our honourable finance minister, has highlighted the need for the sustainable development and growth of real estate industries. Here is the breakdown of the key points from the budget impact.

**Green Growth** - The finance minister has highlighted green growth as a 5<sup>th</sup> priority, stating that the 'Honourable Prime Minister has given vision for life on the lifestyle of the environment to spur the environmentally conscious lifestyle'.

**Solar Rooftop Installation** - The government has initiated that there will be rooftop solarisation with 1 crore households enabled to obtain up to 300 units of free electricity per month in all the real estate properties.

**Rural Housing Establishment** – The Pradhan Mantri Awas Yojana (Grameen) has initiated the target of establishing 3 crore houses with an additional 2 crore targeted for the next 5 years.

**Middle-class Households** – The housing for the middle-class scheme is to be launched as a solution for middle-class people to buy and build their own houses.

The budget measures are anticipated to stimulate the overall real estate growth in the country. These allocations are expected to boost the real estate industry, which is considered the fundamental sector of the economy. This budget is also expected to increase and improve the purchasing power of potential home buyers<sup>1</sup>.

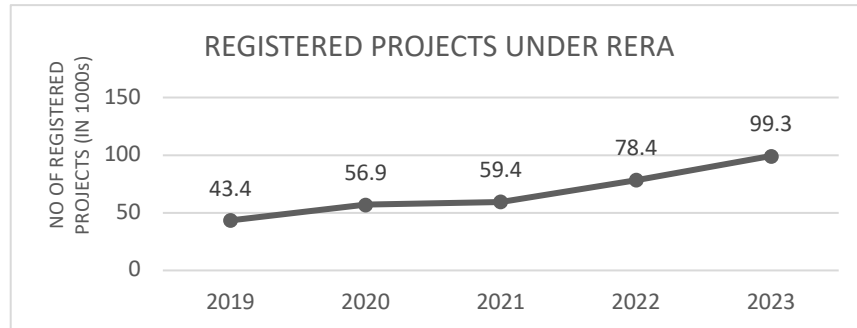
Coming to the most important aspect of the Real estate industry, which stands as a backbone by protecting builders, brokers, and consumers with transparency and adaptability, is known as the RERA – Real Estate Regulatory Authority Act, established in the year 2016. RERA is the regulatory body and the authority controlling the builders, agents, and customers. In simple words, RERA is the guidelines provided to the real estate sector from unfair practices and protecting investors and builders from exploitation. Further, RERA can be explained from 3 perceptions, first from the perception of builders. Builders play a vital role in the real estate industry, for instance, before the enforcement of RERA, one builder/developer will take up to 10 projects in one hand and act accordingly, which leads to funds diversification and stands as a monopoly in the market. To avoid such practices, RERA has put forth certain regulations stating that the builders must get permission from RERA. Secondly, from the perception of agents. An agent who is not registered under RERA is no longer bound to deal in a registered property.<sup>2</sup> They must keep the records, display their ID number, and act optimistically. This promotes transparency and accountability for both the agents and the buyers. And the last from the perception of customers. Customers play an important role in the RERA. The primary

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<sup>1</sup> Ankit Gohel et. al., 'Budget 2024 Key Highlights: New tax slabs in effect, fiscal deficit projected to reduce in FY2025' *Livemint* (25 July 2024) <<https://www.livemint.com/economy/budget-2024-key-highlights-live-updates-nirmala-sitharaman-infrastructure-defence-income-tax-modi-budget-23-july-11721654502862.html#>> accessed 07 September 2024

<sup>2</sup> Real Estate (Regulation and Development) Act 2016

objective is to protect the customer's interest and establish a transparent and accountable system in the industry.



'Statista - The Statistics Portal'<sup>3</sup>

The future growth of real estate relies on the adaptation of emerging technology advancements. In this digital world, technology changes and gets updated according to the lifestyle of the people. The emerging technology in the real estate world is termed 'PropTech' (property technology). For consumers, Virtual Tours, Artificial Intelligence (AI), and blockchain technologies play an efficient role in protecting them from violations and illegal activities.

### PRE-RERA REAL ESTATE GAMBLE

Before the establishment of the RERA Act 2016, homebuyers were always in fear of the builders/developers as they did not give possession on time to provide the quality of the property, not provide the required original documents, or change the layout plans by adding a common area to extract money or charging extra amounts in the name of various taxes where the customers are unaware leading to the loss and unfair practices.<sup>4</sup> One of the major factors of real estate gambling is selling properties on disputed land or land without DTP approvals, leading to legal battles and loss in investments. Diversion of funds is very common in the real

<sup>3</sup> 'Information about the sources of statistics' (Statista) <<https://www.statista.com/getting-started/working-with-statista-information-about-the-sources-of-statistics>> accessed 07 September 2024

<sup>4</sup> Harmish Patel, 'All You Need to Know about Real Estate (Regulation and Development) Act, 2016' (iPleaders, 31 May 2017) <<https://blog.iplayers.in/real-estate-regulation-and-development-act-2016/>> accessed 07 September 2024

estate market, leaving the original projects ultimately unfinished. It is mandatory to know that the real estate industry before RERA was not beneficial and trustworthy.

### **‘CHAOS TO CLARITY’ - IMPACT OF RERA REGULATIONS**

After seeing the bait-and-switch tactics in the real estate sector, having a concern for homebuyers and builders, the Indian govt has implemented an act called the Real Estate Regulatory Authority, which is commonly termed RERA, which was established in the year 2016. The main objective of RERA is to protect the interests of the consumers, builders, and agents with transparency, accountability, adaptability, and proximity. Subsequently, the act promotes fair practices in the real estate sectors, ensuring that the homebuyers receive the property in the stipulated timeline with all the requirements. RERA Act is comprised of 10 chapters and 92 sections, which set the guidelines for the real estate authorities and mandate them to act accordingly. As a result, if the concerned party does any act that goes beyond the RERA guidelines, strict action will be imposed with penalty and imprisonment. The physical body of the RERA will:

- Ensure the customer's interest is protected from exploitation.
- Creates a solution to resolve the disputes quickly.
- Creates an appellate tribunal to oversee both the residential and commercial construction projects.<sup>5</sup>

### **ESCROW ACCOUNT UNDER THE RERA ACT 2016**

The Indian parliament has enacted the RERA Act to regulate the real estate sector and protect homebuyers. One of the essential provisions made in this act is the mandatory use of ESCROW real estate accounts. The RERA mandates that 70% of the funds collected from buyers for housing projects must be deposited into a separate escrow account. For instance, if the project is worth 100 crore, the developers must open an escrow account and deposit 70 crore in that

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<sup>5</sup> Richard White, ‘The Impact of Technology on Real Estate: Trends Shaping the Future’ (*Perry Real Estate College*) <<https://www.perryrealestatecollege.com/the-impact-technology-has-on-real-estate-shaping-the-future-of-the-industry>> accessed 07 September 2024

account. This will be monitored by both the RERA and the builders as a joint signatory.<sup>6</sup> The funds in the escrow account can only be used for specific purposes related to the project development, and this protects the buyers from being diverted to other projects or misused by developers. Putting all together, this account benefits both the buyers and the developers, reducing the risk of losing money and potentially leading to smoother project execution.

### KEY PROVISIONS OF THE RERA ACT 2016

- According to the RERA Act 2016, states that no developer can advertise, book, sell, or offer for sale any project without prior approval and registration with RERA. However, it provides an exception that there is no registration required where the total area of the land proposed developed does not exceed 500 Square meters or does not exceed eight.
- If failure to register the project under RERA, a penalty of 10% of the total project cost or imprisonment of up to 3 years or both.
- The RERA Act 2016 has codified **Carpet Area** under section 2(k)<sup>7</sup>, which represents the usual living space apartment, excluding any common areas, but includes the areas covered by internal partition walls of the apartment.
- Similarly, this act restricts the developers from making alterations to the registered plan of any apartment, building, or area without the written consent of two-thirds of the allottees of the residential projects.<sup>8</sup>
- Real estate agents/brokers must also register themselves under RERA authority.
- RERA established a fast-track dispute-resolution mechanism

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<sup>6</sup> 'All About RERA Escrow Account' (*Razorpay*, 26 October 2023) <<https://razorpay.com/learn/business-banking/era-escrow-account/>> accessed 07 September 2024

<sup>7</sup> Real Estate (Regulation and Development) Act 2016, 2(k)

<sup>8</sup> A. Godge and Atul Kumar, 'Features, Benefits, Impact, and Key Provisions of Real Estate Regulatory Authority (Rera) Act 2016' (2021) 13(1) *Vidyabharati International Interdisciplinary Research Journal* <<http://dx.doi.org/10.5281/zenodo.7573546>> accessed 07 September 2024

## THE POSITIVE SIDE OF RERA REGULATIONS AND FUTURE TECHNOLOGY

- The RERA Act protects homebuyers from unfair practices and diverted collection of funds. It empowers the buyers with information. Project registration with detailed plans, timelines, and carpet area is mandatory under RERA regulations.
- The real estate developers must compulsively open ESCROW accounts, which was mandated by the RERA to protect the buyers' investments. Developers must use those funds for specific projects, preventing the use of diverted collection of funds.
- RERA establishes speedy courts for real estate disputes and arbitration, mediation, and conciliation play a role in the disputes, offering the buyers a quicker and cost-saving way to address the grievances.
- Technology empowers innovative solutions and allows for a more efficient and informed property experience for homebuyers.<sup>9</sup>Blockchain technology can secure transactions and record-keeping. Big data analytics enhance buyers and developers with valuable insights into market trends and property valuation, leading to the desired decisions.
- By combining the regulations and technologies, the real estate sector can create a robust and transparent for developers and buyers. Regulatory authorities can use the data from online platforms to gain more insights and identify the areas for improvement in the regulatory framework. Collaboration can ensure greater protection for consumers, fostering trust with wider adoption.

## THE NEGATIVE SIDE OF RERA REGULATIONS AND FUTURE TECHNOLOGY

- The first disadvantage is that developers of the real estate sector are restricted from accessing RERA's escrow account to immediately the capital, hindering the ability to find ongoing operations and launch new projects.
- The regulations requiring approvals and permission can be time-consuming and expensive, which causes delays in starting and finishing the projects.

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<sup>9</sup> Shirish V Deshpande, 'Buyer-Builder Disputes: Try Conciliation, Mediation First' *Times of India* (30 April 2023) <<https://timesofindia.indiatimes.com/buyer-builder-disputes-try-conciliation-mediation-first/articleshow/99885834.cms>> accessed 07 September 2024

- Real estate developers adhere to strict regulations on deadlines, and developers must complete the project on the said timeline while doing registration under RERA. If the timeline is extended, a penalty will be imposed on the concerned real estate company, which should be paid in huge amounts. This causes distress to the developers by delaying the completion of projects.
- Coming to the technological aspect, not everyone can be able to access the technology required to fully use the PropTech solution. This creates an uneven balance between the developers and homebuyers. Also, technology will not be suitable in all circumstances. For instance, in the case of virtual tours, perfect natural light and noise can be seen in the VR's. As real estate transactions move online, the risk of cyberattacks increases massively.<sup>10</sup>

## REAL ESTATE 2.0: TECH-ENABLED SECTOR

**Revolutionising into Smart Cities - Tech for Smoother Buying Experience:** Moving on to the most vibrant concept for the development known as Property Technology, often termed as 'PROPTECH'. In today's digital world, technological innovation is hyper-accelerated at an unprecedented pace. The digital transformation is fundamentally reshaping virtually every aspect of our lives and real estate is no exception. From online transactions to virtual property tours and blockchain transactions, technology metamorphoses the real estate industry.

PropTech is changing real estate with emerging technologies like Artificial Intelligence, Virtual reality tours, Digital marketing, and data analytics. This technology introduces streamlining processes and innovative solutions like smart homes, Drones, the Internet of Things (IoT), blockchain, crowdfunding, fintech, and shared economy.<sup>11</sup> These advancements make the sector more productive and cost-effective. By elevating resource usage and potentially reducing a building's environmental footprints, PropTech paves the way for a more sustainable future. These goals were outlined in the UN's 2030 Agenda for Sustainable Development. Just as important, property is at the heart of the smart territory, and it is developers of real estate to

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<sup>10</sup> 'RERA - Advantages & Disadvantages' (*Dhruva Projects Blog*, 26 April 2021)

<<http://dhrupaprojects.com/blog/2021/04/26/rera-advantages-disadvantages/>> accessed 17 October 2024

<sup>11</sup> *Ibid*



take the lead role and enact suitably, which empowers economic growth and drives healthy competition globally. Let's elaborate on these technologies with recent issues and explore the benefits for both the developers and consumers.

**Artificial Intelligence (AI)** - Artificial Intelligence is one of the emerging technologies in the current scenario. For developers and homebuyers, AI can be a personal assistant. AI platforms can automate tasks like rent collection, predictive analysis, property valuation models, personalised customer experience, and streamlining informed sectors in the country. Developers can grasp AI platforms for smarter market trends and analysis, designing efficient energy-saving buildings, predicting future competition, and making investment decisions. It can also analyse the factors of efficiency, sustainability, and adaptation, which translates to cost savings during construction and boosts long-term value. For consumers, AI offers personal property experience and recommendations, virtual tours, property valuation models, and effective customer service through AI-powered chatbots 24/7.

**Big Data Analytics** - Big data entitles the developers with the insights to make investment decisions, pricing, and development projects. This reduces the risks and attains increased profitability. Eventually, big data gives deeper information about market trends<sup>12</sup>. Subsequently, big data can personalise the real estate voyage for customers. They will be presented with virtual assistance, which saves time and effort in property search.

**Virtual Reality** - Virtual reality plays a vital role in the real estate market by offering a convenient experience for both developers and consumers. In the current scenario, virtual reality is used in almost every sector/industry to make the job easier and quicker with high quality. In the pre-virtual reality period, developers and homebuyers rely on physical property tours. The homebuyers had to schedule a time with the agents and visit each property in person, leading to inconvenience on busy schedules. In some properties, the access will be restricted for property visits before buying. However, there are few positives without the VR. They are personal visitation and interaction with the builders and agents of real estate companies.

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<sup>12</sup> Riddhi Gadhiya, 'Real Estate Investment in India 2024: Expert Insights' (*Beyond Walls*, 11 July 2024) <<https://corporate.beyondwalls.com/blog/real-estate-investment-india>> accessed 07 September 2024

The birth of Virtual reality technology has made the real estate industry authorities more flexible and time-consuming. Almost all VR app development companies provide a spectrum mode of services in the VR real estate segment. This technology not only improves customer experience but also boosts sales. The impact of VR on the real estate sector includes<sup>13</sup>:

- **Effortless Virtual Tours:** Real Estate in VR allows the agents and developers to market and set the property from any corner of the world without physical visitation, which simplifies the cost and saves time.
- **Immersive Insights:** By enhancing prospective buyers to virtually interact with their desired house, the buyers ensure an excellent experience that maximises their satisfaction level to buy the property.
- **Sense of Ownership:** Since the buyers are witnessing their property inside a 360-degree 3D virtual environment, eventually, they start perceiving it as their own, which increases the chances of selling the property.

VR offers a wide range of possibilities for the real estate sector, but it is not without disadvantages. First, VR technology is still evolving and may not be available for all properties. Secondly, VR headsets are expensive, thereby limiting the accessibility for both the agents and homebuyers. VR cannot fully replicate the real-world experience like natural light, and noise levels cannot be perfectly captured in Virtual reality.

**Blockchain Technology:** blockchain technology, the secure and transparent digital ledger system that shore up cryptocurrencies, is poised to disrupt the real estate market. The future of blockchain streamlines transactions, reduces costs and opens new opportunities for property ownership to homebuyers. <sup>14</sup>The main core strength of blockchain relies on its ability to create a tamper-proof record of ownership and transactions. This process would evolve into due diligence, which currently involves manually verifying hives of paperwork. With blockchain technology, ownership history and relevant documents would be readily available and verifiable, reducing the risk of errors and fraud. Furthermore, blockchain technology opens the

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<sup>13</sup> *Ibid*

<sup>14</sup> *Ibid*

doors for innovative applications in the industry. Blockchain has enabled an easy property search process and gradually reduced the need for brokers and agents, blockchain aims to eliminate the middlemen and their fees, thereby saving the cost. Normally, when two parties get into an agreement via writing, it is known as a contract. Blockchain offers a smart contract, which means a normal contract but in a digital format. When a smart contract is used, the funds are blocked in the blockchain until the demands are fulfilled by the developers while transferring the asset. According to the sources, a unique online platform known as **Asset Monk**<sup>15</sup> uses blockchain tech to promote transparency, accountability, and trustworthiness among developers and customers.

**Augmented Reality:** AR is one of the trending technologies after the rise of the pandemic. According to the statistical analysis, Augmented Reality will hit the revenue mark of 340 million dollars by 2028. The core idea of AR technology is to overlay real-time information on any smartphone, enabling innovative ways to interact with investors. Since the COVID-19 pandemic, the trend of the adaptation of AR has been huge by allowing buyers to conveniently explore the property from their homes. This enhances a perfect technology in today's busy lifestyle and ultimately streamlines the real estate sales process. In the same way, AR technology and VR technology are like each other, with slight differences which stand out independently.

According to the latest senses, 13% of the global economy is the real estate market in the world. It is said that real estate technology is categorised as an emerging sector as PropTech exploded. Residential real estate transactions are on the commercial side, taking what we are seeing around residential real estate transactions like company's hippo, dome, and blend, making the process of buying a home for the consumer faster, easier, cheaper, and more frictionless through technology can be applied to commercial real estate transactions. The Indian real estate industry has assured of a major transformation hiked by innovative technologies. The global market is expected to reach USD 133.05 billion by 2032; India is one of the significant players in this growth. Indian buyers, especially youngsters, are adapting to the latest technology. According to the metrics, it shows that 6% of recognised startups in India focus on PropTech, indicating

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<sup>15</sup> '7 Ways Blockchain is Revolutionizing the Real Estate Sector' (*Asset Monk*)

<<https://assetmonk.com/articles/commercial-real-estate/how-blockchain-is-revolutionizing-real-estate-sector/>> accessed 07 September 2024

the growth of the tech-enabled real estate sector in the country. In the recent interim budget, the finance minister has announced green technology in the real estate market, aiming to protect the environment. Government initiatives play an important role by providing affordable housing schemes known as Pradhan Mantri Awas Yojana, set to give them 79,000 crores to boost the housing sector and said to be completed by 31<sup>st</sup> December 2024. With government support, emerging technologies, sustainable practices, and increased investments, the 1 trillion-dollar dream by 2030 will be achievable.<sup>16</sup>

## **HEALTHY HOMES, HEALTHY PLANET - THE RISE OF GREEN TECHNOLOGY IN INDIA**

India has marked a dynamic mission to achieve net zero emissions by 2070, an official announcement made on COP26. Furthermore, in the G20 summit, the country has made a vibrant focus on climate change initiatives with the slogan 'One Earth, One Family, One Future'. So, it is high time the real estate and construction industries dive in with their requirements to attain sustainable buildings in the properties. Sustainable development meets the needs of the present to meet the ability of future generations own needs and wants. In the same way, sustainable buildings meet the eco-friendly structure that reduces environmental impact throughout the life cycle from construction to use. This gives predominance to renewable energy sources. At present, India is testifying a high demand for green buildings as businesses move towards a sustainable economy.

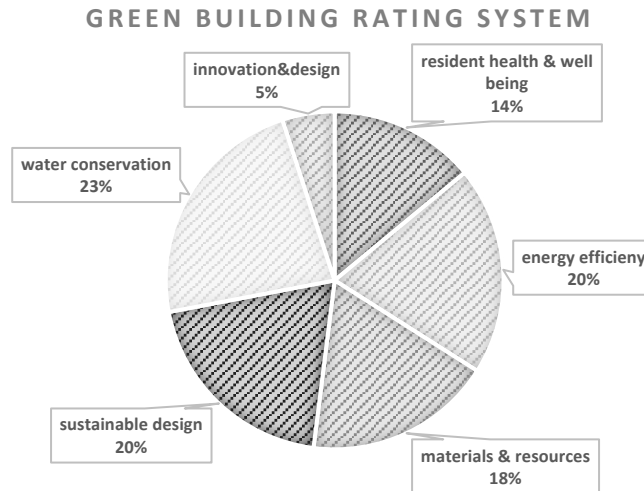
According to the Global Status Report for Buildings and Constructions 2022, over 34 percent of energy and approx. 37 percent of processes are related to CO2 emissions in 2021, stimulating the growth of ESG into real estate and construction to drive sustainable development. To net zero emissions, real estate regulations are anticipated to become more serious and active. India has been awarded LEED certification for a total of 323 green building projects.

Sustainable buildings aim for eco-friendly projects, which include solar energy, sewage and water medicine for plants, natural sunlight and O<sub>2</sub>, rainwater harvesting systems, and so on. The raw materials for green building construction consist of recycled materials, energy-efficient

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<sup>16</sup> *Ibid*

glass, eco-friendly wood, paint with low emissions, and advanced installation materials. Innovative applications are adopted by the developers, ensuring that 100% of sites have zero water discharge, 90% of their portfolio is green building certified, eliminating fossil fuel consumption, using technology-enabled applications such as monitoring of pollution, and upgrading to EV-ready infrastructure. If these systems are enforced, India will emerge as a top country for an eco-friendly and sustainable environment.<sup>17</sup> The cost of green buildings is comparatively higher than other methods. Putting all together, innovation, education, and policy enforcement will play a role in shifting towards a friendly and sustainable environment. The biggest challenge is the lack of awareness among real estate developers and home buyers. Schools and colleges must be provided education and benefits of green technology. According to the latest interim budget for 2024, the finance minister has highlighted green growth as 5<sup>th</sup> priority, stating that the PM has given a vision for life on the lifestyle of the environment, and the govt has initiated rooftop solar installation with 1 crore households will be installed by 2024.



According to the report analysis, India has achieved 75% to facilitate 10 billion square feet of green building footprint. Now, India can become a world leader in sustainable built environments with continued support, guidance, and involvement in various national and international real estate sectors.

<sup>17</sup> Konica Bhatt, 'India has achieved 75% of the 'Green Building Footprint' target in 2020' *Times Now* (07 August 2020) <<https://www.timesnownews.com/business-economy/real-estate/article/india-has-achieved-75-of-the-green-building-footprint-target-in/633584>> accessed 07 September 2024

## SYMBIOTIC RELATIONSHIP BETWEEN RERA AND FUTURE TECHNOLOGY

We all know that the RERA – Real Estate (Regulation and Development) has been the landmark legislation in the history of the real estate industry. Its objectives marked a significant shift towards transparency, adaptability, and efficiency that had been plagued with issues of trust by the homebuyers and the developers. RERA has mandated the developers to register the projects under the real estate regulation authority. The registration includes the blueprint, project details, stages of development, and funds collected and usage. Post-RERA, the real estate sector is widely adopting emerging technologies online project registration platforms like PropTech, AI, VR, AR, Blockchain, etc., for standards, efficiency, and customer management<sup>18</sup>. Technically speaking, the RERA Act does not specify any technology however, it indirectly encourages its adoption and creates opportunities for every state and developer to enforce technology to achieve goals in the real estate market. RERA establishes a dispute resolution mechanism for online portals for grievance filing between buyers and builders. Robotic Process Automation can automate the tasks involved in project approvals, registration, and document processes, which saves time and cost. Blockchain can secure real estate transactions and reduce heavily-loaded paperwork. Even though there are no provisions relating to technology in the RERA Act, the legislation encourages the adaptation of those technologies in the real estate world and attains greater economic growth. All the states have separate RERA – Real Estate Regulation Authority except Nagaland. They enforce their own rules and regulations, but by the end of the day, these states come under the control of the union government. The Uttar Pradesh Real Estate Authority (UP RERA) has invited IT firms to introduce emerging technologies like Artificial Intelligence and Machine Learning for the development of a smart court system. After the pandemic, the judiciary is urged to make e-court systems with virtual tours, online dispute resolution mechanisms, and blockchain technology to secure documents and records. Summarising, it is appreciated that every state in India is adopting emerging technologies in the real estate industry to make life simple and easy with high standards. It is suggested that in the upcoming amendments, the legislation is requested to add the technology aspects and its

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<sup>18</sup> *Ibid*

positives and importance in the RERA Act 2016. There are no cases and landmark judgments relating to RERA and technology as it is still evolving.

### **FUTURE RECOMMENDATIONS TO FOSTER PROPTECH AND RERA INTEGRATION**

In this digital age, the real estate industry promises a dynamic future for real estate online sales platforms in India. The economic trends, sustainable green investments, emerging technologies, government initiatives, and policies will be the key drivers, and thus, the real estate developers must abide by these two aspects with proper understanding and witness the future growth of the industry and country. Some of the initiatives and key recommendations to foster the RERA and technology integration include:

As the RERA Act stands as the landmark legislation in the real estate industry, it is suggested that RERA authorities could explore establishing regulations and guidelines for Property Technology solutions, which would be used for online project registration, documentation management, and ensuring transparency & accuracy within the eco-system. PropTech can be adopted without the RERA act by the real estate developers, but under the regulations of RERA, there will be security where the agents and developers cannot go beyond the law and protect the consumer interest. It is recommended that the RERA Act make certain amendments based on the current society's needs in the real estate market and include provisions relating to technology adaptation. Bridging the digital divide is crucial. It is highly suggested that RERA authorities collaborate with non-governmental organisations (NGOs) and the real estate authorities to offer training programs on using PropTech like AI, VR, AR, blockchain, big data, IoT, and most importantly, green technology for both the developers and homebuyers. As India is moving for a healthy planet by initiating green investment in every sector, awareness about green technology is to be raised in educational institutions, blogs, news articles, social media, documentaries, short films, publishing well-researched, collaborating with government agencies and tech companies for green workforce will empower the individuals and communities to contribute to a healthier planet for all. For consumers, RERA emphasises the carpet area as the basis of pricing, eradicating confusion caused by quoting super built-area and ensuring a fair price for property purchasing. This act mandates project registration and imposes deadlines to avoid delays, securing them from unfair practices. In the same way,

technologies also benefit consumers in the way of high-resolution photos of property, virtual tours, data analysis, predictive pricing analysis, online mortgages, and e-documents, providing greater convenience and a greater property buying experience. Real estate experts can conduct startups and promote their industry by adapting new technology to property development. This makes the homebuyers curious about the innovations, smart homes, and green buildings, offering advice and help with funding and positioning themselves as an expertise industry evolving in the market. Startups facilitate access to funding in the property. Educating homebuyers plays a key role in the real estate industry. The experts are indeed to raise campaigns and organise workshops and seminars educating the homebuyers about the advantages of smart buildings and future technologies.

By 2030, India is in the hope of changing the country into a green country. The government authorities are working tirelessly to attain this goal. The real estate sector is the second-largest industry in the world. It is high time the developers are adopting smart building technologies and enhancing a better country. Thus, the collaboration between RERA and PropTech presents a dynamic possibility for the future of the real estate industry.

<b>SR NO</b>	<b>TOP 10 COUNTRIES - GREEN BUILDINGS AS OF 2023</b>	<b>DATA SENSES</b>
1	Shanghai Tower - China	Reduce 34,000 tons of carbon emissions each year. LEED platinum certification
2	Torre Reforma By Benjamin Romano - Mexico	20% - energy consumption, 94% - natural lighting 100% - wastewater, LEED platinum certification
3	Transoceanic Building - Chile	70% energy cost savings, LEED gold certification



4	Bank Of America – USA	Natural gas-fuelled power plant – 70%
5	Sun-Moon Mansion – China	5000 solar panels
6	Taipei Financial Centre – Taiwan	World’s tallest green building
7	One Central Park – Australia	5-star green star multi-unit residential design V1 certified
8	Sohrabji Godrej Green Business Centre – India	Vegetated roof covers 55-60%, solar photovoltaic with 24KW capacity
9	Cube Building – Germany	Building generated by solar radiation & resource-save
10	Copen Hill – Copenhagen	Converted 4,40,000 tons of waste into clean energy annually.

*Source*<sup>19</sup>

SR NO	TOP 10 COUNTRIES – GREEN BUILDINGS AS OF 2023	DATA SENSES
1	ITC Green Centre – Gurgaon	Solar thermal technology, zero water discharge, reflective high albedo roof paint

<sup>19</sup> Arath Jacquez, ‘15 Best Green Building Projects Around the World’ (*Novatr*, 20 August) <<https://www.novatr.com/blog/green-building-projects>> accessed 07 September 2024

2	Suzlon One Earth - Pune	LEED platinum certification
3	Patni (i-GATE) knowledge center - Noida	LEED platinum certification
4	Olympia Tech Park - Chennai	LEED gold certification
5	Infinity benchmark - Kolkata	LEED platinum green building
6	CRISIL House - Mumbai	70% natural light
7	Indira Paryavaran Bhawan	LEED platinum rating
8	ITC Maurya Hotel - New Delhi	LEED platinum rated to use parabolic solar concentrators
9	Infosys - Hyderabad	LEED platinum rated also known as Green Oscars
10	Cisco building - Bangalore	70,00,000 kWh of green power

With more and more green buildings, India is on the fast track to reducing pollution, carbon footprint, and carbon emissions and is in the process of saving the operational cost to the real estate sector and well contributing to human health. Innovations in areas like renewable energy integration and smart building systems will enhance the sustainability of green buildings. Thus, with the continuous advancement in technology, government support, and the trust of homebuyers, green technology will pave the way for sustainable future growth in the country.

## CONCLUSION

To wrap things up, the Indian real estate sector is on the ambit of remarkable change, which dynamically interplays the symbiotic relationship between the RERA and emerging

technologies, which is also known as PropTech. At first, RERA serves as the backbone of trust to the homebuyers and developers as it sets certain guidelines and regulations which is mandatory to follow. It empowers the transparency of transactions, sets deadlines, and robust buyer protection mechanisms. On the other hand, PropTech incubates both the developer's business and the homebuyers. AI provides valuations, virtual tours provide an immersive property buyer experience, and blockchain technology secures the transactions and collection of funds without diversion and enhances informed decision-making for homebuyers. Property technology can gain a competitive edge in the real estate market. But the future of real estate extends beyond just bricks and mortar. The real estate industry must adopt innovative solutions and focus on eco-friendly construction for a healthy planet. The future lies in fostering a sense of community in the developments that cater to a holistic lifestyle. Moving to further research, this sector can explore how property technology can be integrated with the RERA regulations. This could involve investigating how technologies like AI and blockchain can enhance transparency and compliance in project and financial management. Furthermore, this research fosters the PropTech for faster grievance redressal mechanisms under the RERA, which would be more valuable. As the legislation becomes more intact and has a very good influence on the current real estate world, amendments can evolve with more regulations, including emerging technology. The process of the amendments of this act is still ongoing. It is too early to legislate on both sides. The RERA Act is dependent on the use of the single window system. Across the globe, almost all countries have adopted technology in the real estate industry, but India is still in the process of evolving, and it is high time that this country adopted the emerging technologies in the real estate sector and became the biggest competitor to the other countries. India's real estate sector is the second largest industry, which can further thrive for a future marked by sustainable growth, transparency, innovation, and responsible development.