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Introduction

Welcome to the Indian Journal of Legal Affairs and Research (IJLAR), a distinguished platform dedicated to the dissemination of comprehensive legal scholarship and academic research. Our mission is to foster an environment where legal professionals, academics, and students can collaborate and contribute to the evolving discourse in the field of law. We strive to publish high-quality, peer-reviewed articles that provide insightful analysis, innovative perspectives, and practical solutions to contemporary legal challenges. The IJAR is committed to advancing legal knowledge and practice by bridging the gap between theory and practice.

Preface

The Indian Journal of Legal Affairs and Research is a testament to our unwavering commitment to excellence in legal scholarship. This volume presents a curated selection of articles that reflect the diverse and dynamic nature of legal studies today. Our contributors, ranging from esteemed legal scholars to emerging academics, bring forward a rich tapestry of insights that address critical legal issues and offer novel contributions to the field. We are grateful to our editorial board, reviewers, and authors for their dedication and hard work, which have made this publication possible. It is our hope that this journal will serve as a valuable resource for researchers, practitioners, and policymakers, and will inspire further inquiry and debate within the legal community.

Description

The Indian Journal of Legal Affairs and Research is an academic journal that publishes peer-reviewed articles on a wide range of legal topics. Each issue is designed to provide a platform for legal scholars, practitioners, and students to share their research findings, theoretical explorations, and practical insights. Our journal covers various branches of law, including but not limited to constitutional law, international law, criminal law, commercial law, human rights, and environmental law. We are dedicated to ensuring that the articles published in our journal adhere to the highest standards of academic rigor and contribute meaningfully to the understanding and development of legal theories and practices.

GREEN BUILDINGS: AS PATHWAY IN ACHIEVING SUSTAINABLE DEVELOPMENT GOALS

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ABSTRACT

This research paper examines green buildings as an important legal, environmental and policy instrument for achieving the Sustainable Development Goals (SDGs), particularly in the Indian context. It analyses the manner in which the built environment contributes to energy demand, greenhouse gas emissions, water stress, waste generation and public health concerns, and argues that green buildings provide a practical pathway for integrating climate action with urban development. The paper studies the conceptual meaning of green buildings, their connection with SDGs 7, 9, 11, 12 and 13, and the relevance of resource efficiency, renewable energy, climate resilient design, indoor environmental quality and life-cycle management. It further evaluates the Indian legal framework, including the Constitution of India, the Environment (Protection) Act, 1986, the Energy Conservation Act, 2001 as amended in 2022, the Energy Conservation Building Code, the National Building Code, Model Building Bye-Laws, GRIHA and IGBC rating systems. The paper also considers constitutional environmental jurisprudence, including the right to a clean environment and the emerging right against the adverse effects of climate change. It concludes that green buildings cannot remain merely voluntary market labels; they must be integrated into planning permissions, public procurement, real estate disclosures, municipal governance and climate finance. A combination of mandatory minimum standards, incentives, transparent certification, post-occupancy monitoring and public awareness is required to transform green buildings into a genuine pathway for sustainable development.

Keywords: *Green buildings; Sustainable Development Goals; Energy efficiency; Climate change; Article 21; Urban governance; Environmental law*

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I. INTRODUCTION

The idea of sustainable development requires a legal and policy balance between economic growth, environmental protection and social well-being. The 2030 Agenda describes sustainable development as a universal programmed for people, planet and prosperity, and it calls for transformative steps to shift the world onto a sustainable and resilient path. In this larger framework, buildings occupy a central position because they are not merely physical structures; they are spaces where energy, water, materials, waste systems, mobility patterns, health conditions and social inclusion intersect. A building that is planned, constructed and operated without environmental sensitivity becomes a continuing source of resource depletion. By contrast, a green building attempts to reduce environmental burdens while improving human comfort and long-term economic efficiency.¹

The relevance of green buildings is particularly strong in rapidly urbanizing countries such as India. SDG 11 seeks to make cities and human settlements inclusive, safe, resilient and sustainable, and it expressly recognizes the need for integrated urban planning, safe housing, resource efficiency and climate resilience. India's urban future will be shaped by millions of new residential, commercial and institutional buildings. If these buildings reproduce conventional energy-intensive construction patterns, the urban transition will deepen emissions, water stress and waste pressure. If, however, the same construction demand is governed through green building norms, it can become a tool for climate mitigation, adaptation and public welfare.²

The environmental significance of the built environment is now beyond dispute. The UNEP Global Status Report for Buildings and Construction 2024/2025 records that the buildings and construction sector consume about 32 per cent of global energy and contributes about 34 per cent of global carbon dioxide emissions. These figures establish that buildings are not a marginal environmental issue. They are one of the decisive sites at which SDGs must be implemented. Consequently, green buildings should be understood not as luxury architecture for elite projects, but as a legal and developmental necessity for cities seeking lower emissions, better living conditions and sustainable infrastructure.³

This paper proceeds on the premise that green buildings are an operational bridge between environmental law and sustainable development policy. The research is doctrinal and analytical in nature. It studies constitutional principles, statutory provisions, building codes, certification systems and judicial decisions in order to assess whether the Indian legal framework is adequate

to mainstream green buildings. The paper argues that India already possesses several components of a green building regime, but these components remain fragmented. Their effectiveness depends

¹ UN General Assembly, Transforming our world: the 2030 Agenda for Sustainable Development, GA Res 70/1, UN GAOR, UN Doc A/RES/70/1 (Oct. 21, 2015).

² UN Department of Economic and Social Affairs, “Goal 11: Make Cities and Human Settlements Inclusive, Safe, Resilient and Sustainable”, available at: <https://sdgs.un.org/goals/goal11> (last visited on May 12, 2026).

³ UN Environment Programme, “Global Status Report for Buildings and Construction 2024/2025” (2025), available at: <https://www.unep.org/resources/report/global-status-report-buildings-and-construction-20242025> (last visited on May 12, 2026).

on converting voluntary standards into enforceable municipal and planning obligations, supported by incentives and transparent post-occupancy monitoring.

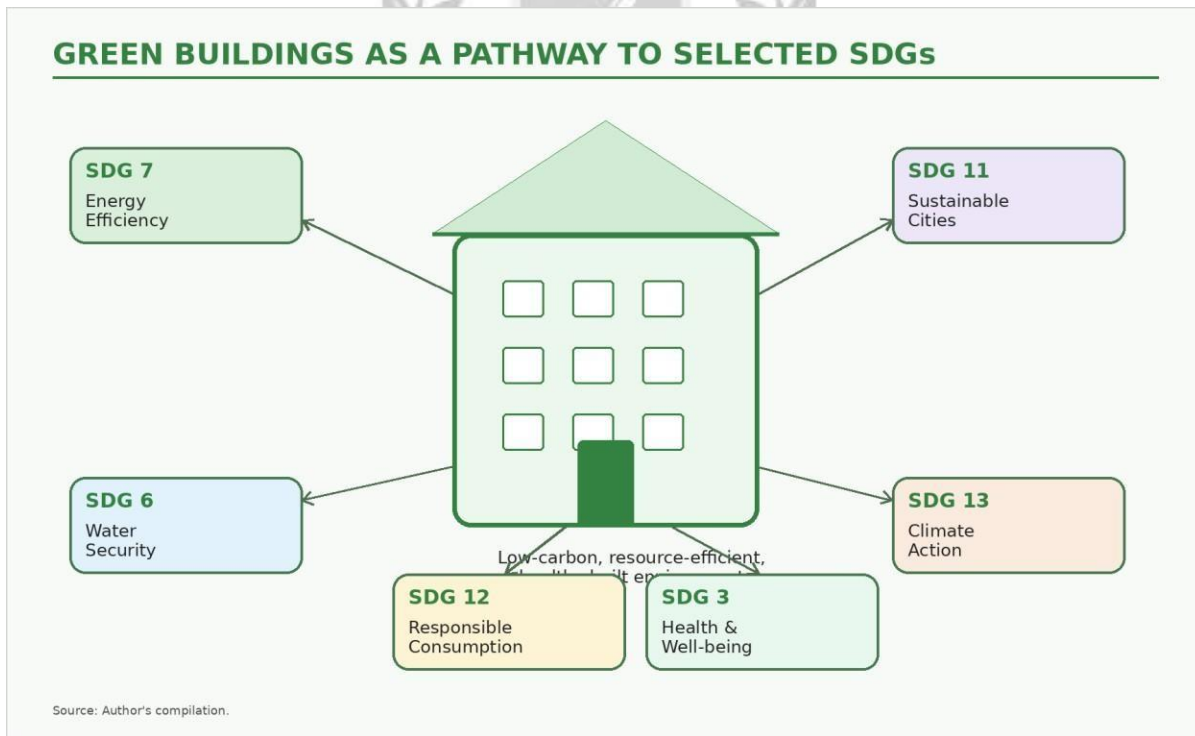


Figure 1: Green buildings as an integrated pathway for selected Sustainable Development Goals. Source: Author's compilation.

II. MEANING OF GREEN BUILDINGS AND SUSTAINABLE DEVELOPMENT

A green building may broadly be described as a building that is designed, constructed, operated and maintained in a manner that minimizes adverse environmental impact and maximizes resource efficiency across its life cycle. Its core features include climate-responsive design, efficient building envelopes, lower operational energy use, renewable energy integration, water conservation, waste reduction, sustainable materials, indoor air quality, thermal comfort, accessibility and resilience. Sustainable construction literature treats green building not as a single technology but as an integrated process connecting site planning, design, procurement, construction, operation and eventual demolition or reuse. The life-cycle approach is essential because a building may appear efficient at the point of completion but still generate high emissions or waste during operation.⁴

The constitutional relevance of this concept lies in the fact that the built environment directly affects the quality of life. Poorly designed buildings increase heat stress, electricity demand, air pollution, water use and waste generation. In contrast, green buildings can reduce exposure to environmental harms and enhance the right to live with dignity. Article 21 of the Constitution of

⁴ Charles J. Kibert, *Sustainable Construction: Green Building Design and Delivery* (Wiley, Hoboken, 5th edn., 2022).

India has been judicially interpreted to include the right to a clean and healthy environment, while Articles 48A and 51A(g) impose a constitutional expectation that the State and citizens will protect and improve the environment. Green building governance therefore gives concrete effect to constitutional environmentalism.⁵

Sustainable development also requires integration. The Rio Declaration states that environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it. This principle is directly applicable to construction activity. Buildings cannot be treated merely as private assets governed by market choice. They occupy land, consume public infrastructure, affect groundwater, modify local climate and impose long-term demands on electricity, sewage and mobility systems. Therefore, the legal regulation of buildings must include environmental performance as a condition of development, not as an optional addition after

planning permission is granted.⁶

A green building is also different from a merely expensive or aesthetically modern building. The legal test must be performance-based. A project should be assessed on whether it reduces resource consumption, protects ecological functions, supports occupants' health, discloses its sustainability claims honestly, and remains efficient after occupation. Without performance standards and verification, the expression "green" may be misused as a marketing label. This is why codes, certification systems and municipal enforcement are critical for turning the green building idea into a credible pathway for SDGs.

III. GREEN BUILDINGS AND THE SDGs

The strongest SDG linkage arises with SDG 7 on affordable and clean energy. SDG 7 includes the target of doubling the global rate of improvement in energy efficiency by 2030 and substantially increasing the share of renewable energy in the global energy mix. Buildings are among the most visible places where this target can be implemented through passive cooling, efficient lighting, high-performance envelopes, energy-efficient appliances, smart metering and rooftop solar systems. A building that consumes less energy reduces both household expenditure and pressure on electricity distribution networks.⁷

Green buildings are equally significant for SDG 13 on climate action. SDG 13 requires urgent action to combat climate change and to integrate climate measures into national policies, strategies and planning. The building sector is highly relevant to both mitigation and adaptation. Mitigation is achieved through lower operational emissions, reduced embodied carbon and renewable energy. Adaptation is achieved through heat-resilient design, natural ventilation, flood-sensitive siting,

⁵ The Constitution of India, arts. 21, 48A and 51A(g).

⁶ Rio Declaration on Environment and Development, 1992, principle 4.

⁷ UN Department of Economic and Social Affairs, "Goal 7: Ensure Access to Affordable, Reliable, Sustainable and Modern Energy for All", available at: <https://sdgs.un.org/goals/goal7>.

water reuse and disaster-resilient construction. Thus, green buildings convert climate policy from abstract national commitment into tangible urban practice.⁸

India's updated Nationally Determined Contribution under the Paris Agreement commits to

reducing the emissions intensity of GDP by 45 per cent by 2030 from the 2005 level and achieving about 50 per cent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030.⁹ These commitments cannot be achieved only through power generation reforms. Demand-side efficiency in buildings is equally important. The Paris Agreement also requires parties to pursue mitigation and communicate successive nationally determined contributions,¹⁰ making domestic building codes and urban policies important implementation tools.

Table 1: Linkages between Green Buildings and Selected Sustainable Development Goals

SDG	Green Building Intervention	Sustainable Development Outcome
SDG 3: Good Health and Wellbeing	Indoor air quality, daylighting, ventilation, non-toxic materials and thermal comfort	Improved health, reduced heat stress and better occupant productivity
SDG 6: Clean Water and Sanitation	Rainwater harvesting, low-flow fixtures, greywater reuse and wastewater recycling	Lower water demand and reduced stress on urban water systems
SDG 7: Affordable and Clean Energy	Efficient building envelope, passive design, efficient HVAC and renewable energy	Reduced energy intensity and increased use of clean energy
SDG 11: Sustainable Cities and Communities	Compact planning, resilience, accessibility, green spaces and waste systems	Inclusive, resilient and environmentally responsible urban development
SDG 12: Responsible Consumption and Production	Sustainable materials, construction waste management and life-cycle assessment	Resource efficiency and reduction of construction waste
SDG 13: Climate Action	Low-carbon design, adaptation planning and emissions monitoring	Mitigation of emissions and improved climate resilience

The table shows that green buildings are not confined to one SDG. They are cross-cutting instruments that combine energy transition, water security, health protection, climate resilience

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UN Department of Economic and Social Affairs, “Goal 13: Take Urgent Action to Combat Climate Change and its Impacts”, *available at*: <https://sdgs.un.org/goals/goal13> (last visited on May 12, 2026).

9 The Paris Agreement, 2015, arts. 2 and 4.

10

Government of India, “India’s Updated First Nationally Determined Contribution Under Paris Agreement (2021-2030)” (August, 2022), *available at*: <https://unfccc.int/sites/default/files/NDC/2022-08/India%20Updated%20First%20Nationally%20Determined%20Contrib.pdf> (last visited on May 12, 2026).

and responsible consumption. This multi-dimensional character makes them especially suitable for India’s urban governance, where fragmented departments often address energy, water, transport and waste separately. A legally backed green building framework can integrate these concerns at the stage of design approval itself, thereby avoiding later remedial costs.

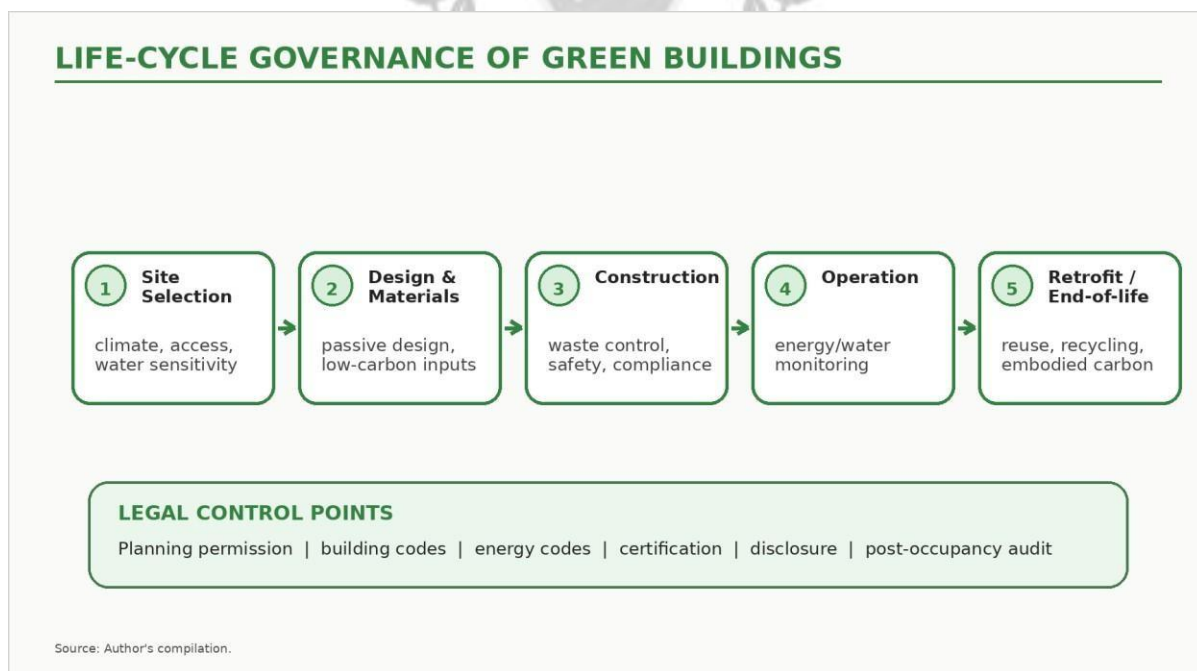


Figure 2: Life-cycle governance approach for green buildings. Source: Author's compilation.

IV. ENVIRONMENTAL AND SOCIAL IMPORTANCE OF GREEN BUILDINGS

The first environmental benefit of green buildings is energy efficiency. Building design determines future energy demand for decades. Orientation, insulation, shading, window-to-wall ratio, reflective surfaces, efficient lighting and efficient heating, ventilation and air-conditioning systems can significantly reduce electricity consumption. The Energy Conservation Building Code (ECBC) identifies building envelope, comfort systems, lighting, electrical power and renewable energy systems as core areas of building energy performance. This regulatory emphasis confirms that the energy footprint of a building must be addressed at the design stage rather than treated only as an operational issue after occupation.¹¹

The second benefit concerns water security. Indian cities face increasing stress due to groundwater depletion, irregular municipal supply and high wastewater generation. Green buildings respond through rainwater harvesting, low-flow fixtures, dual plumbing, wastewater treatment and reuse of treated water for flushing or landscaping. These measures are not merely technical improvements; they reflect the constitutional and public trust logic that scarce natural resources must be used responsibly. When integrated into building permissions, water-efficient design can

¹¹ Bureau of Energy Efficiency, Energy Conservation Building Code 2017 3-5 (Bureau of Energy Efficiency, New Delhi, 2017, rev. 2021).

reduce pressure on municipal networks and improve urban resilience during droughts and heat waves.

The third benefit is waste reduction and sustainable material use. Construction and demolition waste is a major urban governance challenge. Green building approaches promote recycled content, local materials, modular design, waste segregation, reuse of materials and responsible disposal. Such practices support SDG 12 by shifting construction away from linear “extract-build-dispose” models towards circular resource flows. A legal regime that recognises life-cycle impacts can also reduce embodied carbon in cement, steel, glass and other materials, thereby widening the focus beyond operational electricity use.

The fourth benefit is human health and productivity. The indoor environment affects respiratory

health, comfort, learning outcomes and workplace productivity. Green buildings use ventilation, daylight, low-emission materials, acoustic comfort and thermal control to improve occupant wellbeing. The World Green Building Council has highlighted the connection between office design, health, well-being and productivity, demonstrating that the business case for green buildings includes human outcomes and not only utility savings. Therefore, green buildings support SDG 3 as well as SDG 11.¹²

The socio-economic dimension is equally important. Although green buildings may involve additional upfront planning or technology costs, they often reduce long-term operating expenditure through lower energy and water bills. Public buildings, schools, hospitals and affordable housing projects can particularly benefit because operational savings release public resources for other welfare purposes. However, the legal framework must prevent green buildings from becoming exclusionary. Incentives should be designed so that affordable housing, public infrastructure and smaller developers can adopt green standards rather than leaving the field only to premium real estate.

V. LEGAL AND POLICY FRAMEWORK IN INDIA

India does not yet have a single comprehensive “Green Buildings Act”. Instead, the legal framework is composed of constitutional duties, environmental statutes, energy laws, building codes, municipal bye-laws and voluntary certification systems. The Energy Conservation Act, 2001 empowers the Central Government, in consultation with the Bureau of Energy Efficiency, to prescribe energy conservation building codes for commercial buildings. This statute is therefore the central legislative anchor for energy-efficient building governance in India.¹³

The Energy Conservation (Amendment) Act, 2022 has widened the conceptual basis of building regulation by referring to an “energy conservation and sustainable building code” which provides norms and standards for energy efficiency, conservation, use of renewable energy and other green

¹² World Green Building Council, “Health, Wellbeing and Productivity in Offices” (2014), *available at*: https://worldgbc.org/wpcontent/uploads/2022/03/compressed_WorldGBC_Health_Wellbeing_Productivity_Full_Report_Dbl_Med_Res_Feb_2015-1.pdf (last visited on May 12, 2026).

¹³ The Energy Conservation Act, 2001 (Act 52 of 2001), s. 14(p).

building requirements. This amendment is significant because it moves beyond narrow energy conservation and expressly includes renewable energy and other green building requirements. It creates a statutory basis for integrating sustainability into building codes rather than treating it as a voluntary certification issue.¹⁴

The ECBC 2017 is a major instrument in this framework. It sets minimum energy standards for new commercial buildings with a connected load of 100 kW or contract demand of 120 kVA or more, and it recognizes three performance levels: ECBC compliant, ECBC Plus and Super ECBC. The code provides an important model for performance-based regulation because it links legal compliance with measurable energy outcomes. However, its effectiveness depends on adoption by states, incorporation into local bye-laws, trained municipal officials and credible checking at approval and completion stages.¹⁵

The National Building Code of India 2016 also contributes to green building governance. It is a model code for adoption by public works departments, local bodies and private construction agencies, and it contains provisions on administrative regulations, development control rules, safety, services, sustainability and facility management. Although the NBC itself is not a statute of direct universal application, it becomes legally relevant when incorporated into state laws, municipal bye-laws, contracts or public procurement conditions. Its “approach to sustainability” provides a technical foundation for local regulation.¹⁶

The Model Building Bye-Laws 2016 further bridge national guidance and local implementation. They provide a model for states and urban local bodies on building regulation, including sustainability and green provisions. Rainwater harvesting, rooftop solar, wastewater management and resource-efficient design can be incorporated into municipal permissions through local byelaws. This is crucial because construction control operates largely through local development authorities and municipal corporations. If green provisions are not linked to building plan approval, they remain advisory rather than enforceable.¹⁷

Certification systems also play an important role. GRIHA is India’s national rating system for green buildings, developed by TERI and adopted by the Government of India in 2007.¹⁸ The Indian Green Building Council (IGBC) similarly operates rating systems for green and net-zero buildings, and its official data indicates a substantial registered green building footprint in India.¹⁹

Internationally, LEED is widely recognized as a green building rating system that provides a

14 The Energy Conservation Act, 2001 (Act 52 of 2001), s. 2(j), as amended by the Energy Conservation (Amendment) Act, 2022 (Act 19 of 2022).

15 Bureau of Energy Efficiency, Energy Conservation Building Code 2017 5 (Bureau of Energy Efficiency, New Delhi, 2017, rev. 2021).

16 Bureau of Indian Standards, National Building Code of India 2016 (SP 7:2016), available at: https://www.bis.gov.in/standards/technical-department___trashed/national-building-code/ (last visited on May 12, 2026).

17 Ministry of Urban Development, Government of India, Model Building Bye-Laws 2016 (2016), available at: <https://mohua.gov.in/upload/uploadfiles/files/MBBL.pdf> (last visited on May 12, 2026).

18 GRIHA Council, “What is GRIHA?”, available at: <https://www.grihaindia.org/> (last visited on May 12, 2026).

19 Indian Green Building Council, “India’s Premier Certification Body for Greening of Projects”, available at: <https://igbc.in/>.

framework for healthy, efficient and cost-effective buildings.²⁰ These systems help create market recognition and technical benchmarks, but their voluntary nature means that legal integration is still required to ensure broader public benefit.

Environmental statutes remain relevant even when they do not use the phrase “green building”. The Environment (Protection) Act, 1986 empowers the Central Government to take measures for protecting and improving environmental quality.²¹ The EIA Notification, 2006 regulates certain construction and area development projects based on thresholds and environmental conditions.²² The Water Act and Air Act also affect construction and operation where projects discharge effluents, generate emissions or require consent to establish and operate.²³ Together, these laws can support green building outcomes, but they require better coordination with building permissions and urban planning mechanisms.

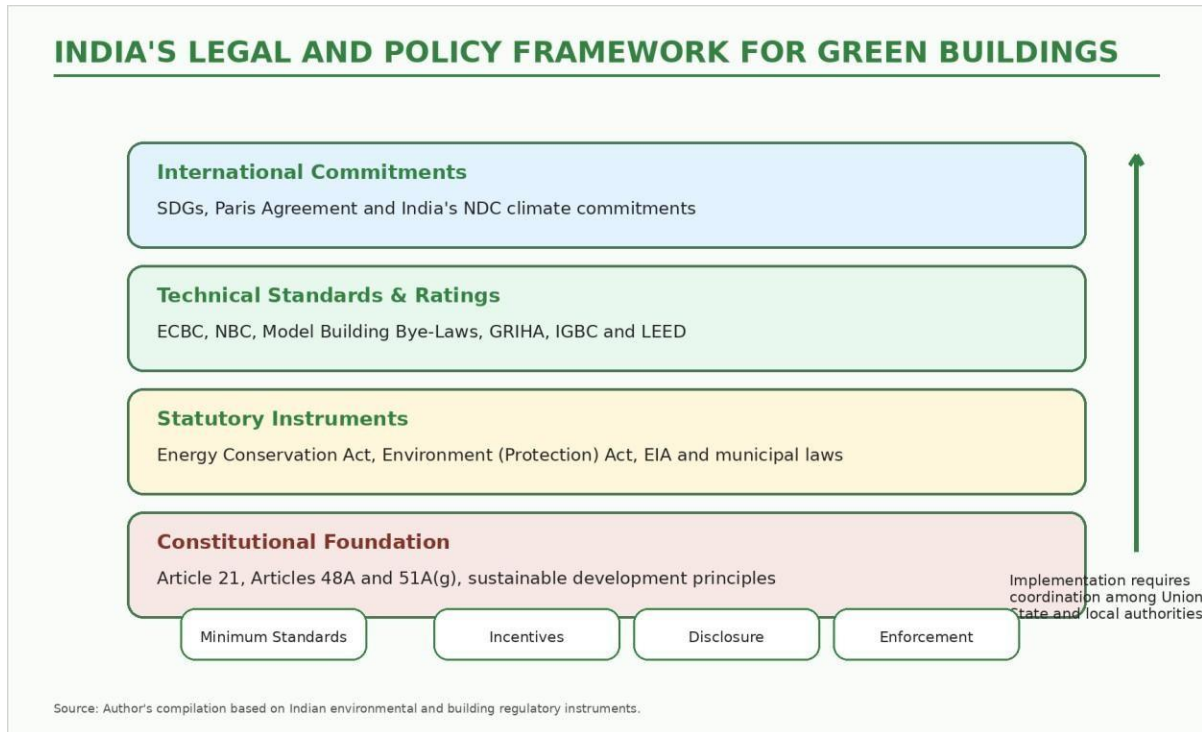


Figure 3: Indian legal and policy framework supporting green buildings. Source: Author's compilation.

VI. CONSTITUTIONAL AND JUDICIAL BASIS

The constitutional foundation for green buildings is rooted in Article 21. In *Subhash Kumar v. State of Bihar*, the Supreme Court held that the right to life includes the right to enjoyment of

²⁰ U.S. Green Building Council, “LEED Rating System”, available at: <https://www.usgbc.org/leed> (last visited on May 12, 2026).

²¹ The Environment (Protection) Act, 1986 (Act 29 of 1986), ss. 3 and 5.

²² Environmental Impact Assessment Notification, 2006, Ministry of Environment and Forests, S.O. 1533(E), Sept. 14, 2006. ²³

The Water (Prevention and Control of Pollution) Act, 1974 (Act 6 of 1974), ss. 24 and 25; The Air (Prevention and Control of Pollution) Act, 1981 (Act 14 of 1981), ss. 21 and 22.

pollution-free water and air for the full enjoyment of life. This principle is directly relevant to building regulation because buildings shape air quality, access to light and ventilation, water demand, waste disposal and exposure to heat. When a city permits environmentally inefficient buildings at scale, it affects collective quality of life.²⁴

In *Vellore Citizens Welfare Forum v. Union of India*, the Supreme Court recognized sustainable development, the precautionary principle and the polluter pays principle as part of Indian environmental law. These principles justify preventive regulation of the building sector. Waiting until urban heat, flooding, waste mismanagement or energy shortages become severe would defeat the preventive purpose of environmental law. Green building codes reflect the precautionary approach because they require better design before environmental damage occurs.²⁵

Indian Council for Enviro-Legal Action v. Union of India strengthened the polluter pays principle by emphasizing that the person responsible for environmental harm must bear the cost of remedial measures.²⁶ In the building context, this principle supports internalizing environmental costs through compliance obligations, impact fees, waste management duties and energy performance requirements. Similarly, *M.C. Mehta v. Union of India* reflects the judiciary's willingness to evolve environmental liability principles to address industrial and technological risks.²⁷ Urban construction, though different from hazardous industry, also creates cumulative risks when regulatory systems ignore environmental performance.

Municipal Council, Ratlam v. Vardi Chan is relevant because it treats municipal responsibility for public health and sanitation as a legal duty rather than a matter of administrative convenience. This reasoning can be extended to urban local bodies dealing with building approvals. Municipalities should not merely approve floor area and setbacks; they must consider water management, sanitation, waste handling, heat mitigation, accessibility and environmental safety. Green building regulation therefore fits within the broader public health obligations of local governance.²⁸

The most recent constitutional development is the Supreme Court's decision in *M.K. Ranjitsinh v. Union of India*, where the Court recognized that the right against the adverse effects of climate change is protected by Articles 14 and 21. This decision strengthens the legal basis for climateresponsive building regulation. If climate harms threaten life, health and equality, then the State must mainstream mitigation and adaptation into sectors that significantly contribute to emissions and vulnerability. Green buildings are one such sector.²⁹

Judicial environmentalism does not mean that courts should design technical standards for buildings. Rather, courts provide the constitutional direction: the State must regulate development consistently with environmental protection, inter-generational equity and climate justice. The technical details should be implemented by legislatures, ministries, Bureau of Energy Efficiency,

- 24 Subhash Kumar v. State of Bihar, (1991) 1 SCC 598.
- 25 Vellore Citizens Welfare Forum v. Union of India, (1996) 5 SCC 647.
- 26 Indian Council for Enviro-Legal Action v. Union of India, (1996) 3 SCC 212.
- 27 M.C. Mehta v. Union of India, (1987) 1 SCC 395.
- 28 Municipal Council, Ratlam v. Vardi Chan, (1980) 4 SCC 162.
- 29 M.K. Ranjitsinh v. Union of India, 2024 INSC 280.

Bureau of Indian Standards, municipal bodies and expert agencies. This relationship between constitutional mandate and technical regulation is essential for effective governance.

VII. INTERNATIONAL APPROACHES

International practice shows that green buildings are increasingly treated as a climate governance instrument. The Paris Agreement requires parties to pursue mitigation efforts and communicate national climate commitments,³⁰ while the SDGs require integrated policies for energy, cities, consumption and climate. The New Urban Agenda also emphasizes sustainable urban development and integrated planning for inclusive, safe, resilient and sustainable cities.³¹ These frameworks do not prescribe a single building code, but they create a strong normative expectation that domestic laws should govern the built environment in a climate-responsible manner.

Comparatively, jurisdictions have used different models. Some rely on mandatory energy performance codes; others combine performance standards with rating systems, tax incentives, disclosure obligations and public procurement requirements. LEED has become a globally recognized voluntary rating framework, while countries and cities increasingly supplement rating tools with mandatory minimum energy codes. The lesson for India is that voluntary rating systems can stimulate markets, but minimum standards must be legally enforceable to achieve SDGs at scale.³²

The Indian model is still evolving. ECBC, GRIHA, IGBC and NBC together create a strong technical ecosystem. However, technical availability is not the same as legal implementation. India's federal structure means that building regulation is implemented through states, development authorities and local bodies. Consequently, national green building goals must be translated into state rules, municipal bye-laws, standard tender documents, public works manuals and real estate approval conditions. Without this translation, sustainability remains uneven across cities.

Public procurement can provide a comparative lesson. Government is a major builder and occupier of offices, schools, hospitals, universities, courts and public housing. If all public buildings are required to achieve specified green performance standards, the State can create demand for green materials, skilled professionals and verification systems. This would also demonstrate constitutional leadership, because public authorities should not promote sustainability only through policy speeches while constructing inefficient buildings with public funds.

VIII. IMPLEMENTATION CHALLENGES

The first challenge is fragmented governance. Energy efficiency is administered by the Bureau of Energy Efficiency and power departments; building permissions are controlled by municipal bodies and development authorities; environmental clearances are handled by environmental

30 The Paris Agreement, 2015, arts. 2 and 4.

31 UN General Assembly, New Urban Agenda, UN Doc A/RES/71/256 (Dec. 23, 2016).

32 U.S. Green Building Council, "LEED Rating System", *available at*: <https://www.usgbc.org/leed> (last visited on May 12, 2026).

authorities; water and waste systems involve separate agencies. A green building, however, requires these elements to operate together. Fragmentation results in overlapping paperwork but weak performance verification. A developer may obtain several approvals without any single authority taking responsibility for post-occupancy sustainability outcomes.

The second challenge is the voluntary character of many green rating systems. Voluntary certification is valuable for market leadership, but it cannot ensure universal sustainability. Premium commercial projects may pursue certification for branding, while smaller buildings and public housing may remain outside the green transition. This creates an equity problem. If green buildings are essential for public health and climate mitigation, the law should establish minimum mandatory standards for all relevant building categories while reserving higher ratings for projects that exceed the baseline.

The third challenge is cost perception. Developers often argue that green features increase capital costs. This argument is incomplete because it ignores life-cycle savings from lower energy, water and maintenance costs. It also ignores avoided public costs such as reduced grid burden, lower

storm-water stress, improved health outcomes and decreased waste management pressure. The legal framework must therefore shift from first-cost thinking to life-cycle costing, especially in government procurement and public infrastructure.

The fourth challenge is weak enforcement after occupancy. Many buildings are assessed at design or construction stage, but actual energy and water use depends on operation, maintenance, occupant behavior and equipment performance. A building may receive a rating but later perform poorly due to malfunctioning systems, excessive cooling, poor maintenance or non-use of wastewater treatment units. Post-occupancy monitoring, annual energy disclosure and periodic renewal of certificates are therefore necessary to prevent greenwashing.

The fifth challenge concerns transparency and consumer protection. Real estate buyers increasingly encounter claims such as “eco-friendly”, “green”, “sustainable” and “net zero”. Without clear standards, such claims may mislead consumers. The Real Estate (Regulation and Development) Act, 2016 requires disclosure of project details and imposes duties on promoters, and these disclosure obligations can be expanded to include verified sustainability features. Consumer protection principles also require that environmental claims be accurate, substantiated and not merely promotional.³³

The sixth challenge is capacity. Municipal engineers, architects, builders, contractors and facility managers require training to implement performance-based building regulation. Small urban local bodies may lack the expertise to evaluate energy models, building envelopes, material claims or water reuse systems. Therefore, capacity-building and simplified compliance tools are as important as legal mandates. A complex green building regime that cannot be implemented by local officials will remain ineffective.

³³ The Real Estate (Regulation and Development) Act, 2016 (Act 16 of 2016), ss. 4 and 11.

IX. CONCLUSION AND SUGGESTIONS

First, India should develop a coherent national framework on green buildings that integrates the Energy Conservation Act, ECBC, NBC, Model Building Bye-Laws, GRIHA and state municipal laws. The framework need not replace state autonomy, but it should establish national minimum sustainability standards for different building categories. States and local bodies may then adopt

stricter standards depending on climate zone, urban density, water stress and disaster vulnerability. Secondly, green building requirements should be embedded in building plan approval and occupancy certification. A project should not receive final occupancy permission unless it demonstrates compliance with minimum energy, water, waste and safety requirements. This would make sustainability enforceable at the point where developers most need regulatory approval. Rainwater harvesting provides a useful example: the Ministry of Jal Shakti has noted that Model Building Bye-Laws include rainwater harvesting provisions and that many States and Union Territories have adopted such provisions. Similar integration is required for energy, waste, rooftop solar, heat mitigation and accessibility.³⁴

Thirdly, public buildings should be made mandatory green building projects. Government offices, universities, courts, hospitals, schools and public housing projects should comply with ECBC or relevant residential codes and achieve recognised green ratings where feasible. This would reduce long-term public expenditure and create market demand for green skills and materials. Public procurement should use life-cycle costing rather than lowest initial bid, because cheaper construction may become expensive when energy, water and maintenance costs are counted over the building's life.

Fourthly, the law should introduce post-occupancy performance disclosure. Large commercial, institutional and public buildings should annually disclose energy use intensity, water use, renewable energy generation, waste diversion and indoor environmental quality indicators. Such disclosure can be linked to municipal property tax incentives, green finance and public ranking systems. It would also prevent the misuse of green labels by requiring performance, not only design intent.

Fifthly, incentives should be carefully designed. Additional floor area ratio, faster approvals, property tax rebates, lower development charges or green finance may encourage adoption. However, incentives must be conditional on verified performance and must not undermine urban planning, public space or environmental carrying capacity. Incentives should be stronger for affordable housing, schools, hospitals and small developers so that green buildings do not become a privilege of high-income users.

Sixthly, India should encourage climate-zone specific design. A uniform technology checklist is inadequate for a country with hot-dry, warm-humid, composite, temperate and cold climates. Passive design, shading, ventilation, materials and water strategies must reflect local ecology.

Building regulation should therefore combine national standards with local climate

34 Ministry of Jal Shakti, Government of India, “Law for Rain Water Harvesting”, Press Information Bureau, Mar. 5, 2020, available at: <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1605416> (last visited on May 12, 2026).

responsiveness. This approach can reduce energy demand without overdependence on mechanical cooling.

Seventhly, green building regulation must address embodied carbon and circular construction. Operational energy is important, but the climate impact of cement, steel, aluminum, glass and construction waste is also substantial. Law and policy should encourage environmental product declarations, recycled materials, construction waste recovery, low-carbon cement alternatives and adaptive reuse of existing buildings. Such measures align green buildings with SDG 12 and broader climate policy.

Lastly, public awareness is essential. Occupants determine whether a green building performs as designed. Smart meters, user dashboards, maintenance manuals, resident welfare training and facility manager certification can improve behavior. Sustainable buildings are not only legal objects; they are lived environments. Their success depends on informed users, accountable managers and transparent institutions.

Green buildings represent one of the most practical pathways for achieving the Sustainable Development Goals because they convert broad sustainability commitments into everyday urban infrastructure. They reduce energy demand, conserve water, improve health, promote responsible consumption, support climate mitigation and strengthen resilience. In India, their importance is heightened by rapid urbanization, rising cooling demand, water stress and the need to deliver affordable and dignified housing. The legal question is therefore not whether green buildings are desirable, but how they can be made enforceable, inclusive and measurable.

The existing Indian framework contains important building blocks: constitutional environmental rights, the Environment (Protection) Act, the Energy Conservation Act, ECBC, NBC, Model Building Bye-Laws, GRIHA, IGBC and judicial recognition of climate-related rights. Yet these components remain fragmented. A future-ready regime must integrate them through mandatory minimum standards, municipal enforcement, public procurement, transparent certification and post-occupancy monitoring. Voluntary green ratings should continue to reward leadership, but

baseline sustainability must become part of ordinary building law.

The constitutional jurisprudence on Article 21, sustainable development, precaution, polluter pays and climate rights provides a powerful legal foundation for this transition. In particular, the recognition of a right against the adverse effects of climate change strengthens the duty of the State to regulate high-impact sectors such as buildings. Green buildings should therefore be treated as instruments of climate justice and urban welfare, not merely as market choices. When law, design, technology and public participation are combined, green buildings can become a decisive pathway for achieving sustainable development goals in India.

