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ENVIROMENTAL LAW AND SUSTAINABLE DEVELOPMENT CASE STUDY IN ARCHITECTURAL LAWS.

AUTHORED BY - MS. MAARIA LAKDAWALA (A017)

YEAR: BBA-LLB 4TH YEAR, SEMESTER-VIII

RESEARCH PAPER SUBMITTED

TO THE SVKM'S NMIMS, NAVI MUMBAI

KIRIT P. MEHTA SCHOOL OF LAW

FOR BBA LLB [HONS.]

DECLARATION

I, MAARIA LAKDAWALA, hereby declare that this submitted to the Kirit P. Mehta, School of Law represents my original work and has not been previously submitted for academic or publishing purposes. Furthermore, this paper represents my own opinions and conclusions. The materials/sources utilized in this paper are given their due credit.

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ANSTRACT.

This research paper focuses on sustainable development in India with a specific case study on architectural laws protecting the environment. India's rapid urbanization and economic growth have put a strain on the environment and natural resources, making sustainable development a crucial aspect of the country's development. The paper examines the evolution of India's environmental policy and the role of architectural laws in promoting sustainable development. It analyzes the key provisions of architectural laws, including the Environmental Impact Assessment (EIA) Notification, 2020, the National Building Code of India, and the Green Building Rating System. The study also evaluates the effectiveness of these laws in protecting the environment and promoting sustainable development through a case study of the Indian state of Gujarat. The findings suggest that while architectural laws have contributed to environmental protection and sustainable development in India, their implementation and enforcement need improvement. The paper concludes with recommendations for strengthening the implementation of architectural laws to promote sustainable development in India.

RESEARCH OBJECTIVE.

- To understand the scope of sustainable development in its relation to environmental laws pertaining to central legislation in India.
- To understand the scope of sustainable development in India's fastest growing sector real estate with a case study on sustainable development in architectural laws co relating with existing projects and feasibility in the future.

INTRODUCTION.

“Sustainable architecture looks to the future by looking at the past”

Sustainable architecture aims to reduce the negative environmental effects of buildings by increasing efficiency and exercising restraint in the use of resources, energy, development space, and the ecosystem as a whole. When designing the built environment, sustainable architecture takes a deliberate approach to energy and ecological conservation.

The goal of sustainable or ecological design, is to make sure that how we use the resources that are currently available, does not have long-term negative impacts on our collective well-being or make it impossible to obtain resources for alternative uses.

The term "sustainability" in relation to architecture has so far been mostly considered through the lens of building technology and its transformations. Sustainable Architecture that guzzle energy, require expensive maintenance, or is subject to massive heat-loss or gain through poor insulation or too much glazing. Such building are also called environmentally responsible or green architecture¹

Going beyond the technical sphere of "green design", invention and expertise, some scholars are starting to position architecture within a much broader cultural framework of the human interrelationship with nature. Adopting this framework allows tracing a rich history of cultural debates about our relationship to nature and the environment, from the point of view of different historical and geographical context.

Another way of looking at it would be to look at it as a circle. A circle without interfering with other objects, outside the circle can be termed as sustainable. In the enormously successful book *Design with Nature*², author states that: "If one accepts the simple proposition that nature is the arena of life and that a modicum of knowledge of her process is indispensable for survival and rather more for existence, health and delight, it is amazing that many apparently difficult problems present a ready solution."

Working with nature rather than against it is the key to sustainable architecture; doing so will allow you to both carefully utilise and respect natural processes. With the conviction that "nature knows best," architectural sustainability reflects the idea that it is essential to frame human activities as a non-destructive component of the evolving ecological landscape.

Architect designing a green building takes into account areas that are naturally suitable for urbanisation, agriculture, forestry, and recreation. Designing with nature at the building level entails taking into account sun paths, breezes, shade trees, and rock formations to create a space that people can live in comfortably. While also acknowledging the need to "protect" natural features like trees, animal tracks, habitats, and natural drainage systems.

Illustration: If one were to choose a device with high shading coefficient in the summer and a

¹ A Dictionary of Architecture and Landscape Architecture 2nd Edition, James Stevens Cur (2006) Oxford University Press.

² Design with Nature 1st Edition, Ian L. McHarg, Published 1969.

low shading coefficient in the winter, a vine may be used in place of a mechanical system. The vine shades the building when (and only when) it is needed, and the building provides a home for the vine. Thus both the building and the 'component' of nature are sustainable. By adding rainwater collection, reed beds for sewage and perhaps wind or solar power for electrical energy, the building can be independent of imported service and exported waste, keeping its environmental footprint within the footprint of the site. The final archetypal visual image is one of an isolated, self-sufficient buildings dominated by its surrounding landscape.³

ENVIROMENTAL LAWS AND SUSTAINABLE DEVELOPMENT

‘Development’ has been recognized as a human right under Rio- Declaration of 1992. But all the nations (parties) participating in this summit unanimously agreed that economic or industrial development should be carried out in a manner that it does not adversely affect the environment because environmental pollution is a potential danger to human life and in that case, what is the use of such development? It is for this reason that the principle of sustainable development was evolved in this world summit for maintaining a balance between development and environment, and it was realised that both should go hand in hand.

So in hindsight what is sustainable development?

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their, own needs.... Sustainable development requires meeting the basic needs of all and extending to all opportunity to satisfy their aspirations for a better life.”⁴

The principle of sustainable development which received international recognition as a result of Brundtland Commission Report (1987) was overwhelmingly supported by all the nations. Some of the salient principles which underlie the concept of sustainable development were spelled out in the Rio Declaration, 1992 and Agenda 21. Therefore, these principles have got to be necessarily followed in order to achieve the objective of sustainable development. These principles are as

³ Sustainable Architecture from India, Yusub Turab (IGBC Accredited professional and LEED Green Associate, Coimborate)

⁴ Brundtland Report (1997)

follows:

- **Inter-Generational Equity:** The idea of intergenerational equity assumes that each generation of people has the right to benefit from the natural and cultural resources of the previous generation and the "responsibility" to protect this heritage for the benefit of present and future generations. The conservation of biodiversity resources and of renewable resources, such as forests, water, and soil, is emphasised by the principle.

The foundation for the concept of intergenerational equity shall be found in Principles 1 and 2 of the Stockholm Declaration from 1972, which view the environment as a resource that must be preserved for the benefit of present and future generations. These two ideas are repeated as follows:

Principle 1: Man has a fundamental right to freedom, equality, and appropriate living circumstances in a quality environment that allows for a life of dignity and well-being. He also has a duty to preserve and develop the environment for the benefit of both the present and future generations.

Principle 2.- Careful planning and management, where necessary, must be done to protect the natural resources of the planet, including the air, water, lands, flora, and fauna, and particularly representative samples of natural ecosystems, for the benefit of the present and future generations.

In the landmark case of *A.P. Pollution Control Board v. M.V. Nayudu*⁵, the Hon'ble Supreme Court held that "State Government makes an attempt to balance the need of the environment and need of the economic development, it would not be proper to prohibit it from doing so. In such a case, it would be safer to apply the 'protective principle' and the 'principle of polluter pays', keeping in mind the principle of sustainable development and the 'principle of inter-generational equity.'"

- **Use And Conservation of Natural Resources:** This idea dictates that the earth's natural resources should be used sparingly in order to preserve and improve them for future generations. The idea behind the principle of resource use and conservation is that, in order

⁵ A.P. Pollution Control Board v. M.V. Nayudu (1999(2) SCC 718).

to preserve **natural resources for future generations, the current** generation should not overuse them. This will ensure that future generations will be able to survive.

In the shape of Principles 8 and 23 of the Rio Earth Summit Declaration, 1992, this principle has been endorsed by the global community.

According to Principle 8, States should minimise and eliminate unsustainable patterns of production and consumption in order to promote sustainable development and a high standard of living for all people. Using and protecting natural resources should therefore be a fundamental tenet of sustainable development.

Corresponding to this, Principle 23 of the Rio Declaration (1992) states clearly that the natural resources and environment of those who are oppressed, ruled over, or occupied must be protected at all costs.

Indian Courts adopting the above principles laid down the following precedents in the case of *A. Jagannath v. Union of India*⁶ that that activities of the industries violative of this principle and of, environmental legislations must be discouraged and in the case of *Indian Handicrafts Emporium v. Union of India*⁷ held that the indigenous ivory or ivory articles were prohibited from being exported as it impugned Wild Life (Protection) Act, 1972 and was also against the moral claims embodied under Article 48-A of the Constitution and principle of conservation of natural resources.

- **Environmental Protection:** As far as Indian scenario is concerned the Environment (Protection) Act, 1986 is the central legislation. Besides, there are some other pollution control and prevention laws and States have also framed their own anti-pollution laws according to their local requirements. The ultimate object is to ensure sustainable development for protection of environment from being degraded or polluted.
- **Precautionary Principle:** The precautionary principle in the context of environmental protection is essentially about the management of scientific risk. It is a component of the

⁶ A. Jagannath v. Union of India, [(1997) 2 SCC 87].

⁷ Indian Handicrafts Emporium v. Union of India, Delhi High Court- 20.03.1997.

concept of ecologically sustainable development and has been defined in Principle 15 of the Rio Declaration, 1992.” According to this principle, “where there is threat of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.” In other words, any human activity or behaviour which bears the harmful effect to the environment, has got to be prevented at all costs.

The Supreme Court explicitly recognised the precautionary principle as a principle of Indian environmental law in a number of subsequent cases. Justice Kuldeep Singh of the Supreme Court in *Vellore Citizens Case*⁸ laid down the following rules with regard to precautionary principle: :-

(1) The State Governments and local authorities are supposed to anticipate and then prevent the cause of environmental degradation.

They are supposed to check the activity which is damaging for environment;

(2) Merely because there is a lack of scientific knowledge as to whether a particular activity is causing degradation, it should not stand in the way of the Government;

(3) The onus of proof is on the actor (i.e. person who does the activity) or the developer/industrialist to show that the action was environmentally friendly.

In order to achieve the above, the following precautions are supposed to be taken:

(i) The decision should be based on best possible scientific information and analysis of risk;

(ii) Where there is uncertainty but potentially serious risk exists, even then precautionary measures are supposed to be taken;

(iii) Ecological impacts should be given paramount consideration, more so when resources are non-renewable or where the result is irreversible;

(iv) The indication of the cost should be made known directly to the person who if does not take precaution, can be called upon to meet the expense –

a subject which may fall under the head “polluter pays” principle.”

In *Narmada Bachao Andolan v. Union of India*⁹, the Apex Court explained that “when there is a state of uncertainty due to lack of data or material about the extent of damage or pollution likely

⁸ Vellore Citizens' Welfare Forum and State of Tamil Nadu (joining) v Union of India and ORS 1996 5 SCC 647

⁹ Narmada Bachao Andolan v. Union of India, 10 S.C.C. 664.

to be caused, then in order to maintain ecological balance, the burden of proof that the said balance will be maintained, must necessarily be on the industry or the unit which is likely to cause pollution.”

- **Polluter Pays Principle:** The "polluter pays" principle, which aims to discourage subsidies that could be harmful to the environment, has been incorporated into the environmental policies of all member countries participating in the Organisation for Economic Co-operation and Development (OECD).

However, defining the principle's exact scope and limits on payment for damages caused has been challenging, and the European Community has incorporated the principle into its environmental strategy in Article 130 R (2) of its Action Programme on Environment.

The international community recognized the "polluter pays" principle as an essential part of sustainable development and included it as Principle 16 of the Rio Declaration of Earth Summit, 1992.

The principle emphasizes that preventive action is always preferable to remedial action, and environmental damage should be rectified at the source. The polluter should bear the costs of measures taken to protect and preserve the environment, and environmental policies should be an integral part of a country's overall policies.

The Supreme Court in *M.C. Mehta v Kamal Nath*¹⁰, observed that ‘polluter pays principle has been recognised as fundamental objective of Government's environmental policy to prevent and control pollution. The Court in this case observed that the calculation of environmental damages should not be on the basis of claim put forward by the party, but it should be on the basis of examination of the situation by the Court, keeping in view the factors such as deterrent nature of the award.

In *Vellore Citizens' Welfare Forum v. Union of India*¹¹, the Supreme Court directed the Central Government to constitute an authority under Section 3 (3) of the Environment (Protection) Act, 1986 and confer on this authority all the powers necessary to deal with the situation created by

¹⁰ M.C. Mehta v Kamal Nath 182 of 1996

¹¹ Vellore Citizens' Welfare Forum v. Union of India 1996 5 SCC 647

tanneries and other polluting industries in the State of Tamil Nadu. The authority so constituted shall implement the 'precautionary principle' and the 'Polluter Pays Principle.'

CASE STUDY: IS SUSTAINABLE DEVELOPMENT IN ARCHITECTURAL LAWS REALISTICALLY FEASIBLE IN INDIA.

NEED FOR SUSTAINABLE ARCHITECTURE:

Existing structures have been hard pressed to keep up with the pace of the rapidly evolving dynamics of climate change. Toxic air and septic waters are simply collateral damage in this circumstance. Overburdened public health systems are fraying as more citizens are exposed to the adverse consequences of environmental ills in daily life. Millions continue to suffer, often silently, as they inhabit, without recourse, these imperfect urbanities.¹²

In India, where monsoon floods decimate urban infrastructure, kill thousands of people annually, and destroy lives and livelihoods, climate change's effects are felt on a massive scale.

Sustainable Architecture in India: A 'green' building or a sustainable structure is a building that, in its design, construction or operation, reduces or eliminates negative impacts, and can create positive impacts, on our climate and natural environment. Such eco-friendly buildings preserve precious natural resources and improve our quality of life.

A nationally and internationally recognised standard for the design, development, and operation of high performance green buildings is the Leadership in Energy and Environmental Design (LEED-INDIA) Green Building Rating System. It encourages a holistic approach to sustainability by praising accomplishments in crucial areas.

- Sustainable site
- Water efficiency
- Energy efficiency and renewable energy
- Conservation of materials and resources

¹²The Yamuna river:an essential future ,Pankaj Vir Gupta(roca gallery)

- Indoor environmental quality
- Regional Priority.

The Environmental Impact Assessment (EIA) Notification, 2020 is a legal framework in India that requires industries and projects to undergo an environmental impact assessment before they can be approved. The notification aims to ensure that the proposed projects do not harm the environment, and that measures are taken to mitigate any negative impact on the environment. It specifies the procedures and guidelines for conducting the assessment, and outlines the requirements for obtaining environmental clearance for the project.

The National Building Code of India is a set of guidelines and standards developed by the Bureau of Indian Standards for the design, construction, and maintenance of buildings. It includes provisions for energy efficiency, waste management, and water conservation in buildings. The code provides a comprehensive framework for sustainable building design and encourages the adoption of green building practices.

The Green Building Rating System is a voluntary rating system developed by the Indian Green Building Council (IGBC) to promote sustainable building practices in India. The system evaluates buildings based on several criteria, including energy efficiency, water conservation, waste management, and indoor environmental quality. The rating system encourages the use of renewable energy sources, sustainable materials, and eco-friendly construction practices. The IGBC has developed different rating systems for different types of buildings, including commercial, residential, and industrial buildings.

The Indian government introduced LEED India in 2003, and it has expanded rapidly since then. A vast network of smaller stakeholders has been created as a result, including the construction industry, which consists of corporate, government, and nodal agencies, architects, developers, builders, product manufacturers, and, most intriguingly, green building consultants, a profession that was essentially unheard of ten years ago.

A few illustrations of the sustainable modern architectural structures and buildings at present in India which are certified by (LEED-INDIA):

- Suzlon One Earth, Pune:

The office was created by Pune-based architect Christopher Charles and has obtained a LEED Platinum rating¹³. He and his partner came up with the idea for "Office in the garden" to garner attention. This majestic tower, which spans 10 acres, is one of the largest green building projects in the nation and one of the first LEED (Leadership in Energy and Environmental Design)-certified structures in India.

With 8% of its annual energy coming from photovoltaic panels and windmills on-site, a million square feet of ground plus two storeys in a 10.4 acre urban environment obtained a LEED Platinum and Teri Griha 5 Star certification at a total incremental cost of roughly 11%. There are no other LEED-certified buildings that have attained this degree of certification and this level of cost-effectiveness, along with on-site renewable energy. This project is a "Zero Energy Project," consuming 92% (4 MW) of "sustainable energy"!



Infosys Limited Software Development Block 5 (SDB 5) in Mysore, India.

The Indian Green Building Council (IGBC) has given Infosys Limited the LEED (Leadership in Energy and Environmental Design) India "Platinum" accreditation. This is Infosys Limited's 3rd building to achieve this fleet.

- **Water Efficiency:** By using efficient plumbing fixtures and only using recycled water for irrigation, the facility has reduced its overall water use by 58%.
- **Energy Efficiency:** The structure has the ability to reduce carbon emissions by around 800,000 kg and is 40% more energy efficient. This has been accomplished through a

¹³ 2010

building envelope that is effective and has insulated walls and a roof, as well as spectrally selective double-glazed windows that are properly shaded. Additionally, the utilisation of effective machinery and clever automation results in a 40% decrease in energy expenses.

- 90% of this office area uses natural light for lighting, which reduces the demand for artificial lighting during the day. To guarantee that natural light penetrates as far into the structure as possible, the design features light shelves along every window.
- Green Power: Green Power accounts for all of the building's energy needs.
- Effective Material Selection and Management: Infosys has avoided putting building trash in landfills for this project. Aluminium, glass, and steel recycled materials made up 10% of the total building materials used. Regional manufacturing accounted for 41% of the project's total material costs, minimising transportation-related pollution.



- Rajiv Gandhi International Park:

10 years of "sustainability, energy efficiency, carbon neutrality, water conservation, and environment friendly waste management" have been achieved by the Rajiv Gandhi International Airport (RGIA), Shamshabad, Hyderabad, a greenfield project that began operations in March 2008.

The 5,495-acre property includes an airport area, office buildings, residential townships, training facilities, maintenance operations facilities (MROs), workshops, bus terminals, eateries, parking areas, STPs, rainwater harvesting areas, waste management and recycling areas, and more. By

applying technologies and methods to produce quality results, GMR authorities have been working strategically to advance from Silver LEED certification up to Gold LEED accreditation.

On its 15th anniversary last year, it announced itself as a 'Net-Zero Energy' Platinum-rated building. This continuous awe-inspiring goal to step higher with each passing year makes it a great study model with its design philosophies, materials, and energy efficiency techniques.



- Sohrab Godrej Green Centre:

Today, when sustainability is a necessity rather than a choice, the Confederation of Indian Industry (CII, a non-profit organization)-led Sohrabji Godrej Green Business Centre has been at the vanguard of the country's green building movement for the past 15 years.

The Center was the first LEED Platinum Certified Building in India and outside of the United States in 2004 due to its design, which is a living display and reflection of a favourable green building.

Hyderabad is where the Sohrab Godrej Green Center is situated. Solar PV systems, indoor air quality monitoring, a high-efficiency HVAC system, a passive cooling system using wind towers, high performance glass, attractive roof gardens, rainwater collection, and root zone treatment are just a few of the building's cutting-edge energy and environmental features.

55–60% of the building's roofs are covered by vegetation, while the remaining 20–30% is powered by solar photovoltaic with a 24 KW capacity. The 100 to 120 units of power produced each day are fed into the grid, covering 20% of the building's overall energy costs.

The LEED rating of 56 credits and certification as a LEED Platinum for New Construction (NC)

v 2.0 was first achieved by Sohrab Godrej Green Centre in India and outside of the United States in 2003.



OPINION OF THE AUTHOR

Sustainable architecture is a revolutionary and evolving field and in near future will be a practice adopted by many environmental conscious architects. Sustainable development is essential in the field of architecture with increasing global warming, climate change and numerous environmental crisis. The scope of inculcation of sustainable architecture in the future is promising and optimistic in India as it has already started taking measures. Initiatives such as ICBC (Indian Green Building Council) have helped India in its green building initiative at present.

Sustainable architecture is a growing field and in near future be practiced by many. Sustainable development is required with increasing global warming crisis, climate change. I am optimistic about the future of sustainable architecture in India as it has already started taking measures. Sustainable architecture is going to mark the beginning of a new era of in the field of architecture. With new technology it will be able to revolutionise zero carbon building by standardising highly energy efficient structures ,renewable energy, and even carbon offsetting, where necessary. Eco-friendly architecture will be able of reach new heights.

In Conclusion-There is no doubt that Eco-friendly Sustainable Architecture in India will be able of reach new heights with new modern techniques to be developed and environmentally conscious planning certifications by GCBI (Green Business Certification Inc.) and (LEED- India) already in practice.

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