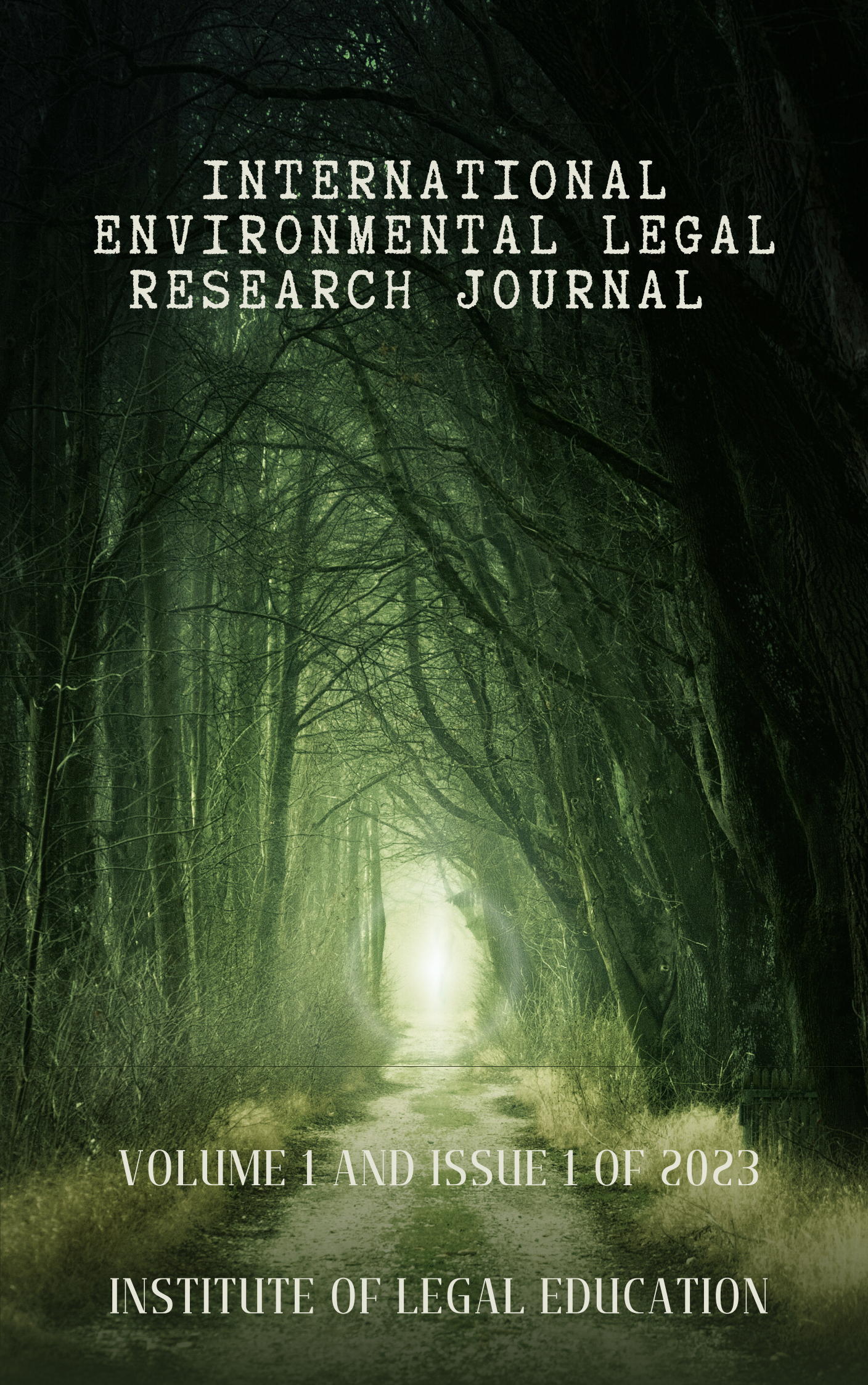

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IMPACT OF INFRASTRUCTURE DEMOLITIONS ON ENVIRONMENT- A STUDY OF THE NOIDA TWIN TOWERS CASE

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Abstract

The article argues that while infrastructure development is decisive in overall development of a nation, it shouldn't be done in a mechanical manner, without taking into account the several laws in place, the potential impacts on environment, and human beings. Infrastructure development has been globally seen as one of the drivers of economic development; which has caused every nation to invest in the same. Despite its positive impacts, the race of developing infrastructure has in many cases led to regulatory oversight and negligence, which have proven to be counter-productive. The heavy investments vanish into thin air, as the infrastructures get converted into fine dust, culminating in serious ecological impacts, owing to judicial orders. In the course of this article, the researcher would analyse the environmental safeguards provided under the Indian legislative framework; the violation of the infrastructural safeguards in the Twin towers case; judicial interventions and infrastructure demolitions; and the impact of infrastructure demolitions on the environment. The article would be a purely doctrinal work.

Introduction

Infrastructure development is considered as a crucial aspect of national development[89] and the benefits of the same has been documented globally.[90] In today's scenario, no nation wants to be left behind, thus every nation is investing heavily in infrastructure development, either by public expenditure, attracting private investments, attracting foreign direct investment (FDI) or by taking loans from other nations[91] or from multilateral financial institutions[92]. India is certainly not an exception to this- yet experts suggest that India should invest more in infrastructure development to suffice the growing needs of the economy.[93] This has led India to invest heavily in infrastructure in the form of ambitious projects like that of the Bharatmala[94] and Sagarmala[95], on the government end, while encouraging other infrastructural development by private players as well.

The process of infrastructure development is extremely resource-intensive[96], in all aspects, as a lot of resources- monetary, natural and human get invested in it. The resource-intensiveness of the infrastructure developments has its fair share of ecological impacts, in the form of air pollution, water pollution, depletion of water resources, noise pollution, deforestation etc. Given the environmental impacts the infrastructure projects entail, the clearing authorities should be extremely careful while awarding them with green flags, especially where private players are engaged. And this is particularly true for the construction sector, which had *"alone*

[89]Rakesh Mohan, *Infrastructure Development in India: Emerging Challenges*, Reserve Bank of India (May 21, 2003), https://rbidocs.rbi.org.in/rdocs/Speeches/PDFs/40405.pdf (last visited 21 Nov, 2022).

[90]Prabir De, *Infrastructure Development in India*, International Infrastructure Development in East Asia – Towards Balanced Regional Development and Integration, ERIA Research Project Report 2007-2, Chiba: IDE-JETRO, 105, 105 (2008), https://www.eria.org/uploads/media/Research-Project-Report/RPR_FY2007_2_Chapter_4.pdf.

[91]OECD BUSINESS AND FINANCE OUTLOOK 2018, (2018).

[92]*Id.*

[93]Prabir, *supra* note 2, at 105.

[94]National portal of India, https://www.india.gov.in/spotlight/bharatmala-pariyojana-stepping-stone-towards-new-india (last visited 21 Nov, 2022).

[95]Government of India, Ministry of Ports, Shipping and Waterways, https://sagarmala.gov.in/# (last visited 21 Nov, 2022).

[96]INFRASTRUCTURE FOR SUPPORTING INCLUSIVE GROWTH AND POVERTY REDUCTION IN ASIA, (Asian Development Bank ed., 2012).

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accounted for half of the global material footprint in 2015"[97].

Any irregularity or negligence on part of the clearing authorities might lead to a moral boost of the builders engaged in illegal constructions, the ultimate fate of which might end in demolitions based on judicial orders- as seen in the case of towers named 'Apex and Ceyane'[98], popularly known as the twin towers of Noida[99], constructed by Supertech Ltd[100]. The demolitions which are judicially ordained[101] due to the potential negative impacts of such constructions, themselves result in several other 'environmental problems'[102]. Thus, the *cure* of one set of problems leads to the *creation* of another.

Simply put, the illegal constructions use a lot of resources, while the demolitions of the same lead to the wastage of the several forms of investments made; while also creating newer sets of problems like air, noise and soil pollution, debris accumulation, improper waste management and health hazards to human beings, to name a few.

While it is well-settled proposition that development of infrastructure has a great role to play in the overall development of a country[103] its impacts on the environment cannot be lost sight of. It has been contended that the impacts could be both positive and negative;[104] the positive ones could be in the form of development of renewable energy facilities[105], climate-resilient structures[106], energy efficient machinery[107] etc.- all of which help us reducing carbon footprints and conserving resources, while the negative ones would be in the form of air and water pollution, wildlife habitat fragmentation[108], and the like. In many cases, it has been observed that the negative impacts far outweigh the positive ones, leading to several risks and problems.[109]

Since both positives and negatives can flow from development of infrastructure, it is clear that 'infrastructure' *per se* isn't the problem; rather it is the context[110] (geographical location, policy considerations, long-term impacts etc.) of such development which is determinative of its goodness or badness. To ensure the flow of *beneficial* and *intended* outcomes from these developmental projects, the legislators and policy-makers have provided for several safeguards via legal instruments, like the Environmental Impact Assessment notification, 2006[111], consent orders, forest clearance and so on from the environmental side; and infrastructural approvals like the layout and building plan approval[112], commencement certificate, development and construction license, fire-fighting scheme[113], internal infrastructure layout and common facilities approval, registration of a residents' welfare association and others, from the relevant authorities. It, therefore, becomes relevant to take a detailed note of the existing legal safeguards, which help in mitigation of negative impacts of infrastructure development, to whatever extent practicable.

[97] PBMKR.pdf, https://wedocs.unep.org/bitstream/handle/20.500.11822/32687/PBMKR.pdf?sequence=1&isAllowed=y (last visited Nov 29, 2022).
[98] Supertech Limited v. Emerald Court Owner Resident Welfare Association and Ors., MANU/SC/0580/2021, para 15.
[99] *Id.* para 15.
[100] *Id.* para 3.
[101] *Id.* para 157.
[102] K Nagaiah, G Srimannarayana, Phaniraj G, *Unfair, damaging & avoidable: Demolition of Noida towers will have long-term impacts* (Sep. 28, 2022) https://www.downtoearth.org.in/blog/environment/unfair-damaging-avoidable-demolition-of-noida-towers-will-have-long-term-impacts-85174.
[103] Dr. B. Srinivasu, P. Srinivasa Rao, *Infrastructure Development and Economic growth: Prospects and Perspective*, 2 (JBM&SSR), 81, 81 (2013), https://www.academia.edu/24400230/Infrastructure_Development_and_Economic_growth_Prospects_and_Perspective
[104] Purusottam Nayak, *INFRASTRUCTURE DEVELOPMENT IN INDIA AN APPRAISAL*, 16.
[105] World Wildlife Fund, https://www.worldwildlife.org/stories/when-infrastructure-goes-wrong-for-nature-and-people (last visited Nov. 22, 2022).
[106] *Id.*
[107] *Id.*
[108] World Wildlife Fund, https://www.worldwildlife.org/threats/infrastructure (last visited Nov. 22, 2022).
[109] *Supra* note 17.
[110] *Id.*
[111] Government of India, Ministry of Environment and Forests, http://www.environmentwb.gov.in/pdf/EIA%20Notification,%202006.pdf (last visited Nov. 22, 2022).
[112] Approval/Clearances Required for New Projects, https://dpiit.gov.in/sites/default/files/approval_clearances_required_for_new_projects.pdf (last visited Nov. 22, 2022).
[113] Bureau of Indian Standards, National Building Code of India 2016, https://www.bis.gov.in/standards/technical-department/national-building-code/?lang=de (last visited Nov. 23, 2022).

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Environmental safeguards in Indian law

At the outset, we have the Environment Protection Act, 1986[114] (EPA) which in its preamble states that it shall *'provide for the protection and improvement of environment and for matters connected therewith.'*[115] This Act, with a view to materialise its aim, has vested on the Central government (CG) wide and extensive powers to take all such measures as it deems necessary and expedient to protect the environment and improve its quality, and prevent and control environmental pollution.[116]

The Act under its section 3 read with section 5, gives the power to the CG to come up with the notification of Environment Impact Assessment (EIA). EIA is undertaken to identify the environmental, and socio-economic effects of a project prior to decision-making.[117] It is done with the goal of predicting environmental impacts at an early stage in project planning and design[118], finding ways and means for mitigating negative impacts[119], structuring projects to suit the local environment[120] and present the predictions and options to decision-makers[121]. The EIA regime in India is dealt by the EIA notifications, 2006 under which the project proponents have to apply for a prior approval, before they begin with their projects. A major part of the EIA procedure revolves around 'public consultation'[122], which is a process by which the concerns of local affected persons and other possible stake-holders[123] are heard, ascertained[124] and recorded. This ensures stakeholder engagement in the developmental process.

Next, we have the Water (Prevention and Control of Pollution) Act, 1974 that seeks to prevent and control water pollution and protect and restore the *wholesomeness* of water in the country.[125] Under this Act, both industrial and domestic users are mandated to ensure that no effluent gets discharged into the 'water streams'[126].[127] Also, everyone has to take approvals, initially the consent to establish (CTE) a new premises or a factory, and upon such establishment, the consent to operate (CTO) in the said premises, from the State Pollution Control Board (SPCB).[128] Similarly, India has enacted the Air (Prevention and Control of Pollution) Act, 1981, wherein certain areas could be declared as 'air pollution control areas' (APCA) by the State government, in consultation with the State Pollution Control Board[129], such that if any industry were to be set up in such APCAs, the person intending to set-up such industry must take the consent of the SPCB, *a priori*.[130] The residential buildings must

[114]The Environment (Protection) Act, 1986, Preamble, No. 29, Acts of Parliament, 1986 (India).
[115]*Id.*
[116]The Environment (Protection) Act, 1986, § 3, No. 29, Acts of Parliament, 1986 (India).
Section 3. Power of Central Government to take measures to protect and improve environment—(1) Subject to the provisions of this Act, the Central Government shall have the power to take all such measures as it deems necessary or expedient for the purpose of protecting and improving the quality of the environment and preventing, controlling and abating environmental pollution.
[117]Convention on Biological Diversity, What is Impact Assessment?, https://www.cbd.int/impact/whatis.shtml (last visited Nov. 23, 2022).
[118]*Id.*
[119]*Id.*
[120]*Id.*
[121]*Id.*
[122]The Environment (Protection) Act, § 7, 29, Acts of Parliament, 1986 (India).
Section 7. Stages in the Prior Environmental Clearance (EC) Process for New Projects:-
7(i) The environmental clearance process for new projects will comprise of a maximum of four
stages, all of which may not apply to particular cases as set forth below in this notification. These four stages in sequential order are:-
Stage (1) Screening (Only for Category 'B' projects and activities)
Stage (2) Scoping
Stage (3) Public Consultation
Stage (4) Appraisal
[123]*Supra* note 23.
[124]*Id.*
[125]The Water (Prevention and Control of Pollution) Act, 1974, Preamble, No. 9, Acts of Parliament, 1974 (India).
[126]*Id.*, § 2.
Section 2 (j) "stream" includes— (i) river; (ii) water course (whether flowing or for the time being dry); (iii) inland water (whether natural or artificial); (iv) sub-terranean waters; (v) sea or tidal waters to such extent or, as the case may be, to such point as the State Government may, by notification in the Official Gazette, specify in this behalf
[127]*Id.*, § 17.
[128]*Id.*, § 25.
[129]The Air (Prevention and Control of Pollution) Act, 1981, § 19, No. 14, Acts of Parliament, 1981 (India).
Section 19. Power to declare air pollution control areas.—(1) The State Government may, after consultation with the State Board, by notification in the Official Gazette declare in such manner as may be prescribed, any area or areas within the State as air pollution control area or areas for the purposes of this Act.
[130]*Id.* § 21.
Section 21. Restrictions on use of certain industrial plants.—(1) Subject to the provisions of this section, no person shall, without the previous consent of the State Board, establish or operate any industrial plant in an air pollution control area: Provided that a person operating any industrial plant in any air pollution control area immediately before the commencement of section 9 of the Air (Prevention and Control of Pollution) Amendment Act, 1987, for

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seek such approvals for operation of the diesel generator sets in APCAs.[131]

The Indian legislative and policy framework also provides for the protection of forests. The Forest Conservation Act of 1980 (FCA) restricts the dereservation of forests and use of land for non-forest[132] purposes, without the prior approval of the Central government.[133] It is under this provision of law that the *forest clearance* is issued, and such issuance is done, only when all other alternatives are infeasible and that particular land is the only feasible option for the purpose under consideration.

While the above laws are well in place, there might be instances where they might get breached, entailing negative impacts on environment protection, forest conservation, conservation of other natural resources, while also affecting the enviro-legal rights of individuals. Given the specialised nature of the field, a need was felt to have a specialised body with expert and judicial members, for the effective and expeditious[134] disposal of environmental cases; which led to the formation of the National Green tribunal (NGT) in 2011 via the National Green Tribunal Act, 2010. To strengthen the institution, to the benefit of the environmental law regime, the Supreme Court has also conferred upon the NGT, the power to take *suo moto* actions, in the case of *Municipal Corporation of Gr. Mumbai v. Ankita Sinha*[135].

The above-mentioned legal provisions are a broad outline of the safeguards provided by the environmental legislations in place, and aren't exhaustive; yet, by glancing through them, it is clear that the environmental laws are not opposed to development. They seek to maintain a balance between protection of the environment and its resources, while also providing for development, which is the precise idea of *sustainable development*. In the current case under study, i.e., the Noida twin towers' demolition case- the issues aren't exactly around the violation of environmental legal provisions, rather of the relevant infrastructure laws, which shall be further discussed.

Violation of the infrastructural safeguards in the Twin towers case

Similar to the environmental safeguards provided by several legal instruments, for infrastructure development; another set of instruments are also present to ensure safe building and construction exercises. These include the fire safety clearance, adherence to the building codes, clearance from the airport authorities etc., to name a few. These approvals and compliances are to be taken really seriously by the project proponents, to ensure safety of the building and its occupants and also to avoid legal battles. It was the non-adherence to certain infrastructural laws, that led to the demolition of twin towers constructed by Supertech, as per the orders of the Supreme Court bench headed by Dr. Justice D.Y. Chandrachud,[136] that affirmed the decision of the Allahabad High Court.[137] The major violations by Supertech have been discussed beneath.

The major point of contention was the *violation of building norms* in the construction of these two towers named Apex and Ceyane. As per the Noida Building Regulations and Directions, 2006[138] (NBR, 2006), the distance between two towers shall not be less than half the height of the tallest tower. The distance, as per the regulation should thus have been 36.5

which no consent was necessary prior to such commencement, may continue to do so for a period of three months from such commencement or, if he has made an application for such consent within the said period of three months, till the disposal of such application.

[131]Government of India, Central Public Works Department, General Specifications for Electrical Works, Part VII (DG Sets), https://cpwd.gov.in/publication/dgsetsfinal2013.pdf (Nov. 23, 2022).

[132]T.N. Godavarman Thirmulkpad v. Union of India, MANU/SC/2001/1998.

[133]The Forest Conservation Act, 1980, § 2, No. 69, Acts of Parliament, 1980 (India).

[134]The National Green Tribunal Act, 2010, Preamble, No. 19, Acts of Parliament, 2010 (India).

[135]Municipal Corporation of Gr. Mumbai v. Ankita Sinha, MANU/SC/1076/2021.

[136]*Supra* note 10, para 155.

[137]*Id.*, para 3.

[138]*Id.*, para 9.

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meters[139], while the distance in reality was 9 metres only. The approval for the second revised plan, for construction of additional towers 16 and 17 (that which got demolished) was taken under the NBR, 2006, and hence the construction should have been compliant with the distance requirement, which was actually breached. This is therefore a *violation of the NBR, 2006*.

Later, the plan was revised again and the third plan was sought to be approved under the Noida Building Regulations of 2010 (NBR, 2010). The approval was given to increase the height of the aforementioned towers, further to 121 metres. And the application of NBR stipulates that a distance of 16 metres should be maintained between adjoining towers, with a height above 18 metres- which is clearly applicable to this case. But, a distance of only 9 metres was maintained, as opposed to the normative requirement of 16 metres, *thereby violating NBR, 2010*.

In addition to the above regulations, the National Building Code of 2005 (Code/ Code of 2005), that prescribes standards for all construction activities relating to 'design of buildings, planning, structural designs, fire safety, landscaping'[140] etc., was also violated in the construction of the twin towers. Applying the Code of 2005, an open space of 20.45 metres should have been maintained around tower 17, but the builder had left a space of 9 metres only. Thus, both the revised plans were in *violation of the National Building Code.*

The safety of the people who would have resided in the twin towers were also compromised with, in the building plan, as there was not enough distance maintained between the towers, to ensure *fire safety*. A distance of 9 metres was maintained as opposed to the ideal distance of 16 metres as mandated under the National Building Code, 2005. This is not only a violation of the NBC, but also would have created an increased risk for the occupants. This violation, interestingly, had been flagged by the Chief Fire Officer, but no action was taken by the Noida authorities against Supertech, neither were any amendments suggested to the construction activities.

Another important point of consideration was regarding the *consent of the existing residents*, of the Emerald Court complex. Ideally under section 5 of the Uttar Pradesh Ownership of Flats Act, 1975[141], the consent of the residents or the resident welfare association (RWA) should have been obtained, a declaration to that effect must have been made and registered under this Act, before changing the percentage of their undivided interest in the common areas and facilities.[142]

Similar to this provision under the 1975 Act, is the section 4 of the Uttar Pradesh Apartments Act, 2010[143], which states that the promoters cannot make changes in the 'plans, specifications and other particulars'[144] without the previous consent of the 'intending buyers', wherein the term 'intending buyer' would include all the persons who are a party to the purchase of such flats, and not the future buyers only, according to the Supreme Court.[145] Such a construction was adopted by the Court to give effect to the intent[146] of the Act in general and that of the provision, in particular; such that the interest of all the parties could be protected, as much as possible. But, just as the approval of the residents under the 1975 Act was not taken, a similar situation ensued under the Act of 2010 too.

[139] *Id.*, para 69.
[140] National Building Code, BUREAU OF INDIAN STANDARDS, https://www.bis.gov.in/standards/technical-department/national-building-code/?lang=de (last visited Nov 29, 2022).
[141] The Uttar Pradesh Ownership of Flats Act, 1975, § 5(2), No. 50, Acts of Uttar Pradesh State Legislature, 1975 (India).
[142] *Id.*
[143] Uttar Pradesh Apartment (Promotion of Construction, Ownership and Maintenance) Act, 2010, § 4(4), No. 16, Acts of Uttar Pradesh State Legislature, 2010 (India).
[144] *Supra* note 10, para 134.
[145] *Id.*
[146] *Id.*

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This was important because, upon construction of the new towers having flats, to accommodate more people[147] (increasing the number of buyers from 650 to 1500)[148], the common resources would undoubtedly have to be shared by a larger group, thus affecting the interests of the existing residents. Despite the impact on their interest, the consent of the residents was not sought. Furthermore, the construction of the twin towers was taking place on a green patch before tower 1, which was again a change in the plan, and called for consent of the residents- none of which was sought.

Not only does the 'lack of consent' amount to violation of laws, but also these constructions which were taking place in brazen[149] contravention of the building norms and fire safety norms; posed greater danger to overall safety of the buildings, the inmates and their rights. The proximity between the towers could lead to intervention of the privacy of the residents, which cannot be allowed as right to privacy has been recognised as an integral part of Article 21.[150] Further, the excessively proximate buildings would block basic necessities like light, air, ventilation etc.[151], and also interfere with the usage of the civic amenities by the residents. The violation of the minimum distance regulation would also facilitate the easy spread of fire from one building to another[152], in case of such a mishappening, and would act as an impediment to the fire-fighting exercises[153] and evacuation exercises[154]- thus endangering the life and safety of the buildings and the residents- all of which should be prevented.

Judicial intervention and infrastructure demolition

While we do have numerous safeguards in place, in the form of legislations, rules, regulations, notifications etc., the Twin towers case is a clear indication of the mindless flouting of these safeguards. The brazen violation of the laws in place, has been attributed by the Supreme Court, to the 'unholy nexus'[155] between the authorities and the building agencies- which eventually led to illegal constructions in the Twin towers case. Due to such poor enforcement of laws, it becomes important for the judiciary to intervene, in the interest of the general public, which is well-reflected by similar cases.

In the case of *Dr. G.N. Khajuria v. Delhi Development Authority*,[156] it was held that the area allocated for a park in a particular locality cannot be diverted for construction of a nursery school, and it is not open for the authorities to carve out whatever structure they want in the place designated for any specific purpose. Similarly, in the case of *the Kerala State Coastal Zone Management Authority v. the State of Kerala, Maradu Municipality and Ors.*,[157] the developmental activities which were carried on illegally, in violation of the Coastal Regulations Zones notification were ordered to be demolished by the Supreme Court. Such interventions leading to demolitions are mostly ordered either in the interest of environment protection or general public welfare. Despite previous orders of the similar kind, not enough deterrence has been created, which has led to numerous illegal constructions over and over again. The judiciary has lamented[158] over the mindless flouting of the laws, by the project proponents, especially in collusion with the approving authorities.[159] And such a fate is attributable to the fact that the 'delinquent officers'[160] aren't taken task of, properly, which

[147] *Supra* note 10, para 137.
[148] *Id.*
[149] *Supra* note10, para 147.
[150] K.S. Puttuswamy v. Union of India, MANU/SC/1044/2017, para 377.
[151] *Supra* note10, para 67.
[152] *Id.*, para 66 and 108.
[153] *Id.*, para 66.
[154] *Id.*, para 109.
[155] *Id.*, para 148.
[156] Dr. G.N. Khajuria v. Delhi Development Authority, MANU/SC/0064/1996.
[157] The Kerala State Coastal Zone Management Authority v. the State of Kerala, Maradu Municipality and Ors., MANU/SC/0808/2019.
[158] Priyanka Estates International (P) Ltd. v. State of Assam, MANU/SC/1860/2009.
[159] Esha Ekta Apartments Coop. Housing Society Ltd. v. Municipal Corporation of Mumbai, MANU/SC/0198/2013.
[160] *Supra* note 71, para 10.

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doesn't prevent them from indulging in illegal and corrupt practices.[161]

The judicial interventions, howsoever significant and landmark, come with a set of problems. The cases against illegal constructions get filed at the times when the constructions are in the advanced stages. Long-drawn litigations in India and the procedural delays are abused by the builders to achieve their own ends. As a result, by the time, the final judgement is pronounced, the constructions near completion or would have been completed already. Despite the level of construction, due to judicial orders that are passed in public or environmental interest, these huge structures are reduced to dust in a matter of seconds,[162] as seen in the twin towers case.

The demolition orders which are passed to ensure the protection of environment, human health and associated rights, have several side-effects- the major ones being their adverse impacts on the environment,[163] which shall be dealt in the next chapter.

Impact of infrastructure demolitions on environment- with reference to the Twin towers case

Infrastructure demolitions entail large scale consequences, socially, environmentally and economically. A lot of resources, which were invested in such constructions would simply go to waste. The sweat and blood of all the engineers, technical personnel and labourers which had led to creation of the enormous structures are basically squandered. While all other impacts remain significant, in this paper, we shall focus on the environmental implications of infrastructural demolitions.

In the Twin towers case, the method employed for the demolition exercise is called 'waterfall implosion'[164], wherein a building or structure is made to collapse with the minimum use of explosives, at a minimal expense, in a controlled fashion.[165] Basically, this technique seeks to demolish a building by weakening or removing its critical supports, such that it becomes incapable to carry its own weight, thus collapsing under gravity.[166] This method is particularly employed in urban areas, where the demolition target is surrounded by several other structures, all of which need to be protected.[167] Further, this method is environment-friendly to a great extent. Given its advantages, no wonder why it was chosen for the twin tower demolitions, in Noida. Despite being considered as one of the safest and most environmentally friendly methods of demolition, what cannot be lost sight of, is that fact that it has led to adverse environmental impacts, in several forms, nonetheless.

One of the biggest environmental concerns around the demolition was that of air pollution. The demolitions led to the formation of clouds of dust and smoke, limiting visibility for some time. Though the dust cleared out in some time, either naturally, or due to use of sprinklers, micro-particles of dust continue to stay up in the air.[168] If samples of the apparent clear air are collected and tested, they could be seen laced with harmful substances in trace quantities, like silica, alumina, cadmium, zinc, arsenic, lead etc.,[169] which are inherently harmful for human health, and has immense adverse effects on the pulmonary system[170]. The air quality in the Delhi National Capital Region (NCR) is as such not in a very encouraging condition, and the dust from the demolition exercise would only add on to the poor air

[161] *Id.*
[162] *Noida's Supertech Twin towers done to dust in 9 seconds*, Down to Earth (Aug. 28, 2022), https://www.downtoearth.org.in/gallery/urbanisation/noida-s-supertech-twin-towers-done-to-dust-in-9-seconds-84575.
[163] *Supra* note 14.
[164] *Id.*
[165] Ankit Wankhede, Tushar Warade, Akshay Patil, *Demolition of buildings by implosion*, 17, ICRTESM, 477, 480 (2017), http://data.conferenceworld.in/GSMCOE/P477-485.pdf.
[166] *Id.*
[167] *Id.*
[168] *Supra* note 14.
[169] *Id.*
[170] *Id.*

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quality.[171] Overall, it can be said that the exercise would 'contribute' to air pollution, as opposed to the goal under the Air (Prevention and Control of Pollution) Act, 1981, which seeks to prevent, control and abate air pollution.[172] It is also noteworthy that the entire Union territory of Delhi[173] and the entire state of Uttar Pradesh[174] (where Noida is located) have been declared as Air Pollution Control Areas (APCAs), wherein stringent measures could be adopted for preservation and maintenance of air quality. Despite the APCA status, the demolition exercise was carried on in Noida, without paying much heed to the deterioration of air quality. Surprising enough was the fact that even the Apex Court of India, didn't take note of the same. Thus, the provisions of the Air Act have been greatly contravened by the exercise of demolition.

Other major issues around the demolition are soil and water pollution. Since India recycles only about 1 percent of its construction and demolition wastes (C & D wastes)[175], most of the rubble generated would end up in dump-sites and landfills, despite the Construction and Demolition Waste Management Rules, 2016 which emphasise upon the recovery, recycling and reusage of the construction and demolition wastes, such that they can be used as 'resources' for other activities.[176] The excessive dumping of the demolition debris containing toxic substances and heavy metals, would lead to leaching of the heavy metals into the soil, eventually causing the degradation of soil quality, vegetation and hence animal and human life.[177] Further, the dust settled on the roads which would get washed away due to rains, either would percolate into the soil or find way into a water channel, thus degrading their quality. When the heavy and toxic substances leach into the soil, and reach the 'subterranean waters'[178] or due to surface runoff, reach a water 'stream',[179] the source of water gets polluted, thereby rendering it unwholesome and unfit for human consumption, against the object of the Water Act, 1974[180].

The implosion resulted in noise pollution, because of the huge amounts of explosives used[181]. The noise peaked at 101.2 decibels[182], which is not very good for human health. It was dangerously close to 120 decibels, which can cause immediate deafness in human beings.[183] Further, a lot of other health issues like that of lack of concentration, hypertension, headaches etc., ensue in human beings when they are subjected to loud noises, even for small amounts of time. The initiation of the procedure of implosion would require the application of a shock, which would loosen the intended structure, but might lead to cracking up of glass structures in the vicinity.[184] Further the sudden fall of the building, would create shock waves comparable to one-third of a regular earthquake[185], and these waves would spread

[171] Shourabh Gupta, *Supertech: It is essential to mitigate pollution, waste post-demolition; here is why*, Down to Earth (Aug. 28, 2022), https://www.downtoearth.org.in/blog/waste/supertech-it-is-essential-to-mitigate-pollution-waste-post-demolition-here-is-why-84576.

[172] The Air (Prevention and Control of Pollution) Act, 1981, Preamble, No. 14, Acts of Parliament, 1981 (India).

[173] Govt. of NCT of Delhi, Delhi Pollution Control Committee (Nov. 03, 2022), https://www.dpcc.delhigovt.nic.in/uploads/news/6fcf774ba1099f8db85685bbbc1bbb2b.pdf.

[174] Uttar Pradesh Pollution Control Board, http://www.uppcb.com/enviracts.htm (last visited Nov. 25, 2022).

[175] Centre for Science and Environment, *India manages to recover and recycle only about 1 per cent of its construction and demolition (C&D) waste, says new CSE analysis*, https://www.cseindia.org/india-manages-to-recover-and-recycle-only-about-1-per-cent-of-its-construction-and-demolition-10326 (last visited Nov. 24, 2022).

[176] Environment Ministry Notifies Construction and Demolition Waste Management Rules for the First Time, https://pib.gov.in/newsite/printrelease.aspx?relid=138389 (last visited Nov 29, 2022).

[177] *Supra* note 14.

[178] The Water (Prevention and Control of Pollution) Act, 1974, § 2(j)(4), No. 9, Acts of Parliament, 1974 (India).

[179] *Id.*, §2 (j).

[180] *Id.*, Preamble.

[181] Karishma Pranav Bhavsar, *Noida twin tower demolition: Impact on environment and residents living nearby*, MINT (2022), https://www.livemint.com/news/india/noida-twin-tower-demolition-what-will-be-the-impact-on-environment-and-on-residents-living-nearby-11661575273327.html (last visited Nov 29, 2022).

[182] Noise Peaked At 101.2 Decibels during twin tower demolition: Data, https://www.outlookindia.com/national/noise-peaked-at-101-2-decibels-during-twin-tower-demolition-data-news-219505 (last visited Nov 29, 2022).

[183] What Noises Cause Hearing Loss? | NCEH | CDC, (2022), https://www.cdc.gov/nceh/hearing_loss/what_noises_cause_hearing_loss.html (last visited Nov 29, 2022).

[184] How strong an earthquake will Noida twin towers cause when they come down?, FIRSTPOST (2022), https://www.firstpost.com/india/how-strong-an-earthquake-will-noida-twin-towers-cause-when-they-come-down-11121101.html (last visited Nov 29, 2022).

[185] Noida Twin Towers Demolition: The 9+4=32 mathematics explained, FIRSTPOST (2022), https://www.firstpost.com/india/noida-twin-towers-

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across the peripheral buildings, which might bring down their expected lifetime.

The demolition effects aren't limited to human beings only, rather are found affecting local flora and fauna. The dust formed, engulfed the trees and vegetation nearby[186], settling on the leaves, thus reducing the rate of photosynthesis,[187] which is not beneficial for the environment, especially when the concentration of green-house gases in the atmosphere is on the rise.

When the vegetation has such a fate, it would invariably impact the birds, animals and specially the insects[188] which are plant-dependent. Due to the noise resulting from the demolition, several species of birds and mammals might leave the area for some time[189], before coming back- the long-term effects are yet to be gauged. The assistant director of the Bombay Natural History Society asserts that the place would be devoid of any kind of biodiversity and there shall be a drastic fall in population of animals like squirrels and jackals and birds like 'owls, barn owls, water birds'[190] etc. – this is especially concerning because the area surrounding the demolition was rich in birdlife,[191] thus the impact would be visibly profound. The dust generated would possibly cause respiratory issues in rodents like squirrels, whose respiratory systems have stark resemblance with that of human beings.[192] All of this show that the demolition would have a significant adverse impact on the biodiversity of the region, which is opposed to one of the aims of the Biological Diversity Act, 2002[193], that seeks to provide for the conservation of 'biological diversity'[194].

The final environmental issue under consideration, in this paper is relating to waste management. The enormous volume of debris generated, would have to be properly disposed off, to avoid repercussions on the environment and human health. Thus, the Construction and Demolition Waste Management Rules, 2016 must be strictly adhered to, which provide for segregation of waste materials[195], preparation of a waste management plan and getting it approved from the local authorities[196] etc., such that the environmental issues arising out of *'storage, transportation, disposal and reuse of C&D waste'*[197] can be mitigated. But the actual adherence to the said rules is unknown and hence the overall impact is concerning. When the debris would get transported, dust particles would be spread across to other areas as well, and the usage of tarpaulins and sheet covers won't do away with the issue, in totality.

The environmental impacts haven't been ignored totally by the authorities, which is reflected by the employment of anti-smog guns, sprinklers, advise to cover the debris while transporting them etc. This is an acknowledgment of the enormity of the exercise and the impacts it can entail- yet a lot has also not been done to ensure proper control and mitigation. The Central Pollution Control Board (CPCB) had plans to monitor the impact of the twin tower demolitions on human health and the environment.[198] The real-time progress of actual execution of such plans is unknown as of now. The environmental experts have called for studying the impact of the demolitions on

demolition-the-9-plus-4-equals-to-32-mathematics-explained-11130541.html (last visited Nov 29, 2022).

[186]Noida twin tower demolition: How will it affect local flora, fauna, https://www.downtoearth.org.in/news/wildlife-biodiversity/noida-twin-tower-demolition-how-will-it-affect-local-flora-fauna-84589 (last visited Nov 29, 2022).

[187]*Id.*

[188]*Id.*

[189]*Id.*

[190]*Id.*

[191]*Id.*

[192]*Id.*

[193]The Biological Diversity Act, 2002, Preamble, No. 18, Acts of Parliament, 2003 (India).

[194]The Biological Diversity Act, 2002, § 2(b), No. 18, Acts of Parliament, 2003 (India).
Section 2(b): "biological diversity" means the variability among living organisms from all sources and the ecological complexes of which they are part and includes diversity within species or between species and of eco-systems.

[195]*Supra* note 91.

[196]*Id.*

[197]*Id.*

[198]CPCB plans to monitor environmental impacts of Supertech Twin Towers' demolition, BUSINESS TODAY (2022), https://www.businesstoday.in/latest/trends/story/cpcb-plans-to-monitor-environmental-impacts-of-supertech-twin-towers-demolition-345891-2022-08-29 (last visited Nov 29, 2022).

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several other aspects like air quality, waste management, impact on buildings etc.[199] The result of the exercises studying the 'after-effects' is yet to come; but it would have plausibly made more sense if an environment impact assessment (EIA) of the demolition exercise was carried out[200], before-hand.

Conclusion

Having studied the environmental and infrastructural approval systems for construction projects, and the safeguards provided therein, it is evident that the legal framework isn't weak in India. It is not essentially the dearth of laws that leads to illegal constructions, rather it's their poor implementation which is the *root cause of all evils*. The approving authorities act in collusion with the project proponents for personal benefits. While the courts do notice this, the judgements prove dear for the project proponents only, and not for the delinquent officers. Thus, steps must be taken to induce deterrence in the implementing agencies by making the delinquent officers personally liable for the award of illegal approvals. As in the twin towers case, the delinquent officers could have been made to pay half the amount of the demolition cost, personally. This also calls for stricter implementation of corruption-control laws like the Prevention of Corruption Act, 1988.

Another key takeaway from this study is that whenever courts are looking at any issue at hand, they should view it from all possible dimensions, because the Supreme Court happened to miss out on an aspect as crucial as the environmental impact of the demolition. Demolition orders aren't a panacea for illegal constructions- because previous judgements on similar lines haven't proved to have enough deterrent effect, anyways. A key deterrent effect could have been created had the court ordered the cancellation of license of the law-violating project proponents and ousting them from operating in the market, for a few years, as done in the securities market.

A committee could have been set-up for studying the environmental impacts of such large-scale demolition, by the Supreme Court; or else the court could have ordered the pollution control boards to carry out environment impact assessment before going ahead with the demolition- this would have expanded the scope of the EIA to demolition activities as well, which is currently limited to new projects or modification projects only.

As it is clearly stressed upon in the study that the demolition led to serious wastage of resources of the nation, the order for such an exercise should be the last resort, and be adopted when all other alternatives are extremely infeasible. Demolition should be avoided as much as possible because it is doubly harmful to the environment- first in the construction process, wherein the resources from nature are exploited; and second during the demolition, where all of it goes to waste, while having added consequences on the environment.

In the interest of national resources, it thus becomes imperative to reuse the 'waste' generated from demolition exercises as much as possible, as envisaged under the C&D Waste Management Rules- thus changing the *solid waste into solid wealth.* To avoid the wastage of resources, the illegal structures should be diverted to serve other purposes. As in the twin towers case, the towers which are now demolished, could have been put into some other use, maybe for a non-residential social purpose or maybe for some recreational activity in the interest of the residents of the other towers, while ousting Supertech from its premises, after testing the safety, security and resilience of the buildings.

[199] *Id.*
[200] *Supra* note 14.

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Though the resident welfare association considers the demolition decision of the Supreme Court as its victory, what is ignored is the fact that the ultimate sufferer is the environment, which had been conveniently ignored by all the possible stake-holders in this case. And when the environment suffers, today; there's no way that the humans will remain joyous and victorious for long, as the effects would trickle down to us- in some way or the other, sooner or later!

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