

We Built This City from Rock to Shore: Re-Conceptualizing the Concept of Built Environment Vis-à-Vis Environmental Protection and Climate Change in the 21st Century

Gregorio Rafael P. Bueta*

Jewel M. Culala**

* '10 J.D., Ateneo de Manila University School of Law. The Author is an international environment, climate, and sustainability legal practitioner and independent consultant. He is a member of the International Union for Conservation of Nature – World Commission on Environmental Law. He also practices as counsel of Magtibay Angeles & Alfelor Law. He has written several published works on the environment, natural resources, and human rights, including *Taking Another Green Step Forward: An Analysis of the Rules of Procedure for Environmental Cases*, 56 ATENEO L.J. 522 (2011); *The Heat Is On: Prospects for Climate Change Litigation in the Philippines*, 62 ATENEO L.J. 760 (2018); *Do the LOCALmotion: Local Government Powers and Climate Change in the Philippines*, 65 ATENEO L.J. 1294 (2021) with Atty. Katrina Isabelle G. Pimentel; *Institutions for Future Generations in Asia*, in INTERGENERATIONAL JUSTICE IN SUSTAINABLE DEVELOPMENT TREATY IMPLEMENTATION: ADVANCING FUTURE GENERATIONS RIGHTS THROUGH NATIONAL INSTITUTIONS (Marie-Claire Cordonier Segger, et al. eds. 2021), co-authored with Antonio G.M. La Viña; *Waste Trade in Southeast Asia: Legal Justifications for Regional Action* (A Report Published by EcoWaste Coalition and IPEN), available at https://ipen.org/sites/default/files/documents/waste_trade_in_asean-final_revised.pdf (last accessed Oct. 31, 2022) [<https://perma.cc/HS8H-LBHL>]; & *Waste Trade in the Philippines: How Local and Global Policy Instruments Can Stop the Tide of Foreign Waste Dumping in the Country* (A Report Published by Greenpeace Philippines and EcoWaste Coalition, available at https://www.greenpeace.org/static/planet4_philippines_stateless/2020/03/da311344-waste-trade-in-the-philippines-report-v2.pdf (last accessed Oct. 31, 2022) [<https://perma.cc/H82Z-GQG3>].

** '23 J.D. *cand.*, Ateneo de Manila University School of Law. The Author is a member of the Board of Editors of the *Ateneo Law Journal*. She joined the Board of Editors of the *Journal* for its 66th Volume in 2021 and served as the Associate Lead Editor for the third Issue of the same Volume.

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I. INTRODUCTION

“I dwell, you dwell. The way in which you are[,] and I am, the manner in which we humans are on earth, is [] dwelling. To be a human being means to be on the earth as a mortal. It means to dwell.”

— Martin Heidegger¹

1. MARTIN HEIDEGGER, POETRY, LANGUAGE, THOUGHT 145 (Alfred Hofstadter trans., 2001).

It was Martin Heidegger who championed that the manifestation of one's being is revealed in the notion of "dwelling."² *But what is dwelling?* A dwelling is not just your house or what you call home; it is not just the space you live in, including your backyard — it is more than that.³ For more than a half of the world's population, dwelling consists of the cities where people live, work, and spend their time.⁴ It is what surrounds a person, the mix of man-made structures and natural features that make up the environment.⁵ Yet this so-called built environment which provides for the setting for human activity is not a mere "aggregation[] of structure and infrastructure."⁶ Much like a fabric, the built environment is "to be woven and rewoven slowly over time[,]"⁷ "to responsibly replace the old with [the] new, [and] the worn with the fresh[.]"⁸

The concept of the built environment — to be discussed more in the sections below — at first glance, is about physical structures and other things built by humans.⁹ It is, however, more than that. When talking about the built

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2. *Id.* See also Stanford Encyclopedia of Philosophy, Martin Heidegger, available at <https://plato.stanford.edu/archives/fall2020/entries/heidegger> (last accessed Oct. 31, 2022) [<https://perma.cc/2SUJ-37UD>].
 3. Henny Coolen & Janine Meesters, *House, Home, and Dwelling*, 27 J. HOUSE & BUILT ENVI. 1, 2-3 (2012).
 4. Vishanthini Kanasan, et al., Effectiveness of Implementing Green Building Tools in Five ASEAN Countries (Promotion of Sustainability in Postgraduate Education and Research, Japan 2018), at 2, available at <https://prospernet.ias.unu.edu/wp-content/uploads/2018/05/ProSPER.Net-YRS-2018-Group-1-Research-Proposal.pdf> (last accessed Oct. 31, 2022) [<https://perma.cc/B5CL-SXUY>].
 5. See Open Wings Foundation, Environment Means Anything That Surrounds Us, available at <https://www.openwingsfoundation.org/environment-means-anything-that-surrounds-us> (last accessed Oct. 31, 2022) [<https://perma.cc/7CES-FGHS>].
 6. John Nivala, *Saving the Spirit of Our Places: A View on Our Built Environment*, 15 UCLA J. ENVTL. L. AND POL'Y 1, 13 (1996).
 7. *Id.* at 42 (citing Herbert Muschamp, *Workmanlike Efforts for Society's Nuts and Bolts*, N.Y. TIMES, Apr. 14, 1996, available at <https://www.nytimes.com/1996/04/14/arts/architecture-view-workmanlike-efforts-for-society-s-nuts-and-bolts.html> (last accessed Oct. 31, 2022) [<https://perma.cc/4QKY-WDJ3>]).
 8. Nivala, *supra* note 6, at 40.
 9. *Id.* at 24 (citing Ervin H. Zube, *Perception of Landscape and Land Use*, in HUMAN BEHAVIOR AND ENVIRONMENT: ADVANCES IN THEORY AND RESEARCH 90 (Irwin Altman & Joachim F. Wohlwill eds., 1976)).

environment, the location of what has been built must be considered in the first place — that is the natural world and the environment around it. In a world increasingly challenged and plagued by environmental and climate issues, this concept becomes even more important as discussed in this Article.

Undoubtedly, the built environment has a growing role to play in securing environmental protection,¹⁰ and in meeting the increasing threats and impacts of climate change.¹¹ As global population rises, there will be an equally increasing need to provide basic needs such as shelter and other basic social infrastructure.¹² By 2050, the United Nations (UN) Conference on Housing and Sustainable Urban Development (Habitat III) forewarns that the world's population will double, thereby “making urbanization one of the [21st] century's most transformative trends.”¹³ Cities are a “key contributor to climate change, as urban activities are major sources of greenhouse gas emissions[,]” with estimates suggesting that “cities are responsible for 75[%] of global carbon dioxide (CO₂) emissions, with transport and buildings being among the largest contributors.”¹⁴

With increased urbanization comes the increasing risks and impacts brought about by climate change.¹⁵ According to the UN Office for Disaster Risk Reduction, cities are at risk due to several factors:

- (1) More than 50% of the world's population reside in urban areas;¹⁶

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10. Katrina M. Wyman & Danielle Spiegel-Feld, *The Urban Environmental Renaissance*, 108 CAL. L. REV. 305, 307 (2020).
 11. See United Nations Department of Economic and Social Affairs, *Global Population Growth and Sustainable Development*, at 22, U.N. Doc. DESA/POP/2021/TR/NO. 2 (2021).
 12. *Id.*
 13. New Urban Agenda, G.A. Res. 71/256, annex, ¶ 3, U.N. Doc. No. A/RES/71/256 (Dec. 23, 2016) [hereinafter New Urban Agenda].
 14. United Nations Environment Programme, Cities and Climate Change, available at <https://www.unep.org/explore-topics/resource-efficiency/what-we-do/cities/cities-and-climate-change> (last accessed Oct. 31, 2022) [<https://perma.cc/C3LR-Q9WX>].
 15. UN Framework Convention on Climate Change, *Initiatives in the Area of Human Settlements and Adaptation*, ¶ 1, U.N. Doc. FCCC/SBSTA/2017/INF.3 (Apr. 25, 2017).
 16. EBRU A. GENCER, HOW TO MAKE CITIES MORE RESILIENT: A HANDBOOK FOR LOCAL GOVERNMENT LEADERS 10 (Gerry Velasquez & Abhilash Panda eds., 2017). (This work was a contribution to the Global Campaign 2010-2020

- (2) Rapid urbanization puts pressure on lands and services;¹⁷
- (3) Urban infrastructure is often inadequate and needs to be retrofitted;¹⁸
- (4) Substandard building;¹⁹ and
- (5) Urban expansion causes detrimental effects on ecosystems.²⁰

These impacts and scenarios will in turn affect environmental and human rights. Joshua C. Gellers, thus, argued that there is nothing to prevent environmental rights from being extended from the realm of the natural environment to the domain of the artefactual or built environment.²¹

In this Article, the relationship between the built environment vis-à-vis environmental protection is explored. The Authors first introduce the notion of built environment and then proceed to peruse the current Philippine laws and policies in place which relate to the built environment. Thereafter, the Article discusses the developments in the international arena to underscore the current environmental challenges surrounding the built environment. The Article concludes with recommendations on how the concept of the built environment — with the Author’s proposed approach — can help improve environmental protection and climate policies in the Philippines.

II. CONSTRUCTING THE CONTOURS OF THE BUILT ENVIRONMENT

This Section discusses the concept of the “built environment” and its relation and importance to environmental protection and climate change. A dictionary definition of the built environment provides that, “[it is] the parts of the places in which we live that have been built by people, for example buildings and

“Making Cities Resilient – ‘My City Is Getting Ready!’” of the United Nations Office for Disaster Risk Reduction.) *Id.*

17. *Id.*

18. *Id.* at 11.

19. *Id.*

20. *Id.* at 12 (citing Hari Srinivas, Networking for Urban Environments (Global Development Research Center Continuing Research Series E-111, Apr. 2020), available at <http://www.gdrc.org/uem/doc-uenetwork.html> (last accessed Oct. 31, 2022) [<https://perma.cc/6ZBK-62S2>]).

21. Joshua C. Gellers, *The Great Indoors: Linking Human Rights and the Built Environment*, 7 J. HUM. RTS. & ENV’T. 243, 245 (2016).

streets, rather than the parts that exist in nature.”²² It refers to the “human-made environment that provides the setting for human activity, ranging in scale from buildings to cities and beyond.”²³ The concept of “built environment” is so encompassing that it relates to all the structures built by man to support human activity including, but not limited to, cities, towns, villages, buildings, streets, roads, and the like.²⁴ According to the United States Environmental Protection Agency (U.S. EPA),

[t]he built environment touches all aspects of our lives, encompassing the buildings we live in, the distribution systems that provide us with water and electricity, and the roads, bridges, and transportation systems we use to get from place to place. It can generally be described as the man-made or modified structures that provide people with living, working, and recreational spaces. Creating all these spaces and systems requires enormous quantities of materials.²⁵

In contrast with the natural environment, the built environment is composed of “man[-]made components of people’s surroundings,” which may vary from small-scale settings like offices, schools, and houses up to the larger-scale settings such as neighborhoods, communities, and cities.²⁶ It may include green spaces and connecting transit systems.²⁷ In summary, the built environment are the man-made structures which humans have “added-on” to nature, something which perhaps can be called “unnatural” or “not-of-nature” when one looks at ecosystems and the natural world in its pristine and unaltered state.²⁸

22. Cambridge Dictionary, Definition of Built Environment, *available at* <https://dictionary.cambridge.org/us/dictionary/english/built-environment> (last accessed Oct. 31, 2022) [<https://perma.cc/L7CE-WD4K>].

23. United Nations Educational, Scientific and Cultural Organization, The Built Environment, *available at* <https://en.unesco.org/disaster-risk-reduction/built-environment> (last accessed Oct. 31, 2022) [<https://perma.cc/26AE-C474>].

24. Adriana Araujo Portella, *Built Environment*, in *ENCYCLOPEDIA OF QUALITY OF LIFE AND WELL-BEING RESEARCH* 454 (Alex C. Michalos ed., 2014).

25. United States Environmental Protection Program, Basic Information About the Built Environment, *available at* <https://www.epa.gov/smm/basic-information-about-built-environment> (last accessed Oct. 31, 2022) [<https://perma.cc/H62A-V7TP>].

26. Margalit Younger, et al., *The Built Environment, Climate Change, and Health: Opportunities for Co-Benefits*, 35 *AM. J. PREVENTIVE MED.* 517, 517 (2008).

27. *Id.*

28. *Id.*

The built environment also has a strong impact on both human and environmental health,²⁹ and on the health of the planet.³⁰ The anthropological impact to the physical environment include “overpopulation, pollution, burning fossil fuels, and deforestation,” and such changes have “triggered climate change, soil erosion, poor air quality, and undrinkable water.”³¹ One article notes that

[there is] no question that human activity has negative environmental consequences [— how] we live our lives, the things we produce and consume, and how we move around affect Earth. With damage to the environment ranging from ozone depletion to acid rain, human-induced soil degradation from deforestation, pollution, and loss of biodiversity, the impacts of humans on our environment are widespread [] in both terrestrial and aquatic ecosystems.³²

Aspects of the built environment such as transportation systems, infrastructure, construction industry, and land-use planning all contribute substantially to the changing of climate, which may result to the increase of atmospheric levels of carbon dioxide and affect the access to green spaces.³³ Due to the increasing number of people living in cities, significant amount of attention is being drawn to the potential impacts of climate change on the built environment.³⁴ The predicted effects of climate change pose several environmental challenges such as winter storm damage, increased urban flooding, heightened demand for summer cooling, water shortages, and prolonged drought, among others.³⁵ The consequences of these changes

29. See Stig L. Bardage, *Performance of Buildings*, in PERFORMANCE OF BIO-BASED BUILDING MATERIALS 335 (Dennis Jones ed. 2017) (“Performance of buildings refers to the efficiency of functionality and its impact on environment and users.”). *Id.*

30. National Geographic, *Human Impacts on the Environment*, available at <https://education.nationalgeographic.org/resource/resource-library-human-impacts-environment> (last accessed Oct. 31, 2022) [<https://perma.cc/LD5H-FNCW>].

31. *Id.*

32. Unite for Change, *Human Impact on the Environment*, available at <https://uniteforchange.com/en/blog/environment/human-impact> (last accessed Oct. 31, 2022) [<https://perma.cc/AA33-AA7H>].

33. Younger, et al., *supra* note 26, at 517.

34. Aloysius Colman C. Ezeabasili & Au Okonkwo, *Climate Change Impacts on the Built Environment in Nigeria*, 7 AFR. RESEARCH REV. 288, 289 (2013).

35. Simon Roberts, *Effects of Climate Change on the Built Environment*, 36 ENERGY POL’Y 4552, 4552 (2006).

brought about by the climate will not only be on the built environment,³⁶ but will likewise extend to the safety and productivity of the population.³⁷

Human impacts and human-induced changes on the environment — including that of the built environment — disproportionately impact those already vulnerable and marginalized globally.³⁸ The Asia-Pacific region is projected to be one of the “most impacted by climate change,” partly because of its “high exposure to climate impacts” and partly because of the “great vulnerability of some areas.”³⁹ One study described a situation of “[climate chaos]” — which is now beyond serious dispute that anthropogenic climate change threatens humanity and other life forms with massive harm.⁴⁰ The countries in the global south are among those heavily affected by environmental catastrophes, especially those in the coastal cities.⁴¹ In the Philippines, urban flooding remains to be a perennial problem.⁴² In fact, it has been predicted by experts and researchers alike that cities such as Manila, Malabon, Bulacan, Valenzuela, and Pasay may be completely inundated in 10

36. Zofia Zięba, et al., *Built Environment Challenges Due to Climate Change*, IOP CONF. SER. EARTH ENV'T SCI., Volume No. 609, at 1.

37. *Id.* at 3.

38. See World Bank, *Social Dimensions of Climate Change*, available at <https://www.worldbank.org/en/topic/social-dimensions-of-climate-change> (last accessed Oct. 31, 2022) [<https://perma.cc/4JGE-6YBM>].

39. ASIAN DEVELOPMENT BANK, *ADDRESSING CLIMATE CHANGE AND MIGRATION IN ASIA AND THE PACIFIC* 19 (2012). See also ASIAN DEVELOPMENT BANK, *A REGION AT RISK: THE HUMAN DIMENSIONS OF CLIMATE CHANGE IN ASIA AND THE PACIFIC* 3 (2017).

40. R. Henry Weaver & Douglas A. Kysar, *Courting Disaster: Climate Change and the Adjudication of Catastrophe*, 93 NOTRE DAME L. REV. 295, 304 (2017).

41. Jeffy John Q. Tomarong, *The Spatio-Temporal Effect of a Flooding Disaster to the Economic Geography of a City: The Case of Tropical Storm Sendong to Cagayan de Oro City, Philippines*, at 75 (Sept. 2020) (published MSc Urban Management and Development thesis, Institute for Housing and Urban Development Studies of Erasmus University Rotterdam) (on file with Erasmus University Repository).

42. Alixandra Caole Vila, *In Over Their Heads*, S. CHINA MORNING POST, Jan. 3, 2021, available at <https://www.pressreader.com/china/south-china-morning-post-6150/20210103/281908776967162> (last accessed Oct. 31, 2022) [<https://perma.cc/9U7X-45BE>].

years due to coastal flooding and the rise in sea levels.⁴³ It has been acknowledged that development in the built environment, specifically in infrastructures in a locality, is the key to prevention and management of urban flooding.⁴⁴ The latter parts of this Article illustrate how the built environment itself may be employed to adapt cities to climate change and create climate-resilient pathways using spatial planning system, industry standards and building design specifications, as well as building regulation performance requirements, and the like.

III. THE BUILT ENVIRONMENT'S ENVIRONMENTAL BLINDSPOT

The relationship between the natural environment and the built environment is a two-way street.⁴⁵ As such, the built environment also leaves an ecological footprint that may be detrimental to the natural world without proper care, diligence, and attention. In early 2022, the World Economic Forum ranked “climate action failure,” “extreme weather,” and “biodiversity loss” as the top three most severe risks facing the society,⁴⁶ the economy, and the financial system over the next 10 years.⁴⁷ These risks are not only intricately related or

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43. Greenpeace, *The Projected Economic Impact of Extreme Sea-Level Rise in Seven Asian Cities in 2030*, at 20, available at <https://www.greenpeace.org/static/planet4-eastasia-stateless/2021/06/966e1865-gpea-asian-cites-sea-level-rise-report-200621-f-3.pdf> (last accessed Oct. 31, 2022) [<https://perma.cc/4WUG-KLMW>] & Philippine Daily Inquirer/Asia News Network, *The Philippines Will Be Underwater in 30 Years: Inquirer*, Straits Times, Dec. 5, 2019, available at <https://www.straitstimes.com/asia/the-philippines-will-be-underwater-in-30-years-inquirer> (last accessed Oct. 31, 2022) [<https://perma.cc/FM2U-YF8Q>].
 44. Ronald V. Gomeseria, *Flood Control Management in Built Environment*, at 2, available at https://www.researchgate.net/publication/356297186_Flood_Contr ol_Management_in_Built_Environment (last accessed Oct. 31, 2022) [<https://perma.cc/237P-XWRP>].
 45. United States Environmental Protection Agency, *Our Built and Natural Environments: A Technical Review of the Interactions Among Land Use, Transportation, and Environmental Quality*, available at <https://www.epa.gov/sites/default/files/2014-03/documents/our-built-and-natural-environments.pdf> (last accessed Oct. 31, 2022) [<https://perma.cc/P23B-H577>].
 46. WORLD ECONOMIC FORUM, *THE GLOBAL RISKS REPORT 2022: INSIGHT REPORT 7* (17th ed. 2022).
 47. Convention on Biological Diversity, *Finance and Biodiversity Day — 14 December 2022 — COP15*, available at <https://www.cbd.int/article/cop15-finance-and-biodiversity-day> (last accessed Oct. 31, 2022) [<https://perma.cc/TA98-KNMC>].

interconnected in nature; they also serve to amplify the effects of one another.⁴⁸ This concern is echoed by what the UN calls the “triple planetary crisis” — the three main interlinked issues that humanity currently faces — climate change, pollution, and biodiversity loss.⁴⁹ This Article discusses each risk and their interplay with the built environment, and why it is critical for discussions on the built environment to consider environmental issues and climate concerns.

A. Climate Action Failure

While climate change is “broad and varied,”⁵⁰ the UN Framework Convention on Climate Change (UNFCCC) has defined it as the “change of climate[,] which is attributed[,] directly or indirectly[,] to human activity that alters the composition of the global atmosphere and which is[,] in addition to natural climate variability[,] observed over comparable time periods.”⁵¹ While climate change is a pressing issue on its own, what is deemed as the foremost global menace over the decade is not climate change per se but *climate action failure*.⁵²

While the metes and bounds of climate action failure have not been defined, in common parlance it pertains simply to the failure to address the climate crisis or to plan for multiple, synergistic risks.⁵³ It is something that is perceived to be a “collective action problem,” in which all stakeholders would be better off cooperating, but they nevertheless fail to do so because of their

48. *Id.* & Seth Wynnes, et al., *Climate Action Failure Highlighted as Leading Global Risk by Both Scientists and Business Leaders*, 10 *Earth's Future* 1, 4 (2022).

49. UN Climate Change, *What Is the Triple Planetary Crisis?*, available at <https://unfccc.int/blog/what-is-the-triple-planetary-crisis> (last accessed Oct. 31, 2022) [<https://perma.cc/363P-SB9J>].

50. Johannes V. Retief, et al., *Extreme Actions and Climate Change: Experienced Gained in South Africa and Germany*, in *SAFETY, RELIABILITY, RISK AND LIFE-CYCLE PERFORMANCE OF STRUCTURES AND INFRASTRUCTURES* 1543 (George Deodatis, et al. eds., 2013).

51. United Nations Framework Convention on Climate Change art. 1 (2), *opened for signature* May 9, 1992, 1771 U.N.T.S. 107 [hereinafter UNFCCC] (entered into force Mar. 21, 1994).

52. WORLD ECONOMIC FORUM, *supra* note 46, at 7.

53. *See* Wynnes, et al., *supra* note 48, at 2 & 4 (The synergistic risks include climate action failure, biodiversity loss, infectious disease, extreme weather events, and human environmental damage). *Id.* at 4.

individual agendas which conflict with the common interests.⁵⁴ This means that not only individuals, but more importantly, governments and corporate agents should not persistently refuse to acknowledge their roles in causing climate change and decline to take responsibility for addressing the glaring problem.⁵⁵

The recent report of the UN Intergovernmental Panel on Climate Change (IPCC) noted the relationship between built environment and climate change.⁵⁶ One of the possible solutions proffered by the IPCC in combatting climate change inaction is to require urgent decision-making from the stakeholders on the built environment to retrofit the existing urban design and to take integrated measures for climate resilience.⁵⁷

B. Extreme Weather

The IPCC report also stated that the heightened exposure from the expanding built environment can result to high wind risks and speeds associated with severe weather systems such as tropical cyclones and typhoons.⁵⁸ The Philippines is no stranger to these occurrences. Majority of the country's inhabitants reside in cities, with the National Capital Region being the most densely populated area with 21,765 persons per square kilometer.⁵⁹ Over the years, the Philippines has experienced not just an increase in super typhoons

54. Philip J. Wilson, *Climate Change Inaction and Optimism*, 6 PHILOSOPHIES 1, 2 (2021).

55. *See generally*, Michael D. Doan, *Climate Change and Complacency*, 29 HYPATIA 634, 635 (2014) (“Sorting out the responsibilities to be assigned and assumed in responding to climate change is a task that calls for broad-based participation.”). *Id.*

56. *See* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2022: IMPACTS, ADAPTATION, AND VULNERABILITY, CONTRIBUTION OF WORKING GROUP II TO THE SIXTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 31-32 (Hans-Otto Pörtner, et al. eds., 2022).

57. *Id.*

58. *Id.* at 927 (“In cities, wind risks from climate change hazards can arise from increased exposure from the expanding built environment.”). *Id.*

59. Philippine Statistics Authority, Highlights of the Population Density of the Philippines 2020 Census of Population and Housing (2020 CPH), available at <https://psa.gov.ph/population-and-housing/node/164857> (last accessed Oct. 31, 2022) [<https://perma.cc/3NXA-5JTB>].

and hurricanes, but also a rise in the frequency of floods and droughts.⁶⁰ Most of these cities and urban settlements are situated along the coastlines — adding to the increased risk of exposure to storm surges and floods brought about by extreme weather.

Studies reveal that human settlement — residential and commercial sectors — remain to be the major producers of greenhouse gases that lead to these kinds of environmental disasters.⁶¹ Thirty-three percent (33%) of the carbon dioxide emissions of human settlements are attributed to the buildings erected in the country, with high-rise buildings consuming most electric supply at 72%.⁶² The Philippine government, in collaboration with the Climate Change Commission, therefore suggested the possibility of reducing carbon footprint through “energy-efficient design and materials for public infrastructure and settlements.”⁶³ It is estimated that once the standard for green buildings will

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60. Gregorio Rafael P. Bueta, *The Heat is On: Prospects for Climate Change Litigation in the Philippines*, 62 *ATENEO L. J.* 760, 761 (2018) (citing John Vidal, *From Heatwaves to Hurricanes, Floods to Famine: Seven Climate Change Hotspots*, *GUARDIAN*, June 23, 2017, available at <https://www.theguardian.com/environment/2017/jun/23/from-heatwaves-to-hurricanes-floods-to-famine-seven-climate-change-hotspots> (last accessed Oct. 31, 2022) [<https://perma.cc/79NY-H5C6>]); Brian McNoldy, *How Does Super Typhoon Haiyan Compare to Hurricane Katrina?*, *WASH. POST*, Nov. 14, 2013, available at <https://www.washingtonpost.com/news/capital-weather-gang/wp/2013/11/14/how-does-super-typhoon-haiyan-compare-to-hurricane-katrina> (last accessed Oct. 31, 2022) [<https://perma.cc/C83A-JHRT>]; Patrick Scott, *Hurricane Irma in Numbers: All the Records the Storm Has Blown Away*, *TELEGRAPH*, Sept. 11, 2017, available at <https://www.telegraph.co.uk/news/2017/09/11/hurricane-irma-numbers-records-storm-has-blown-away> (last accessed Oct. 31, 2022) [<https://perma.cc/JE3Q-4GVF>]; & Ethan Siegel, *The First Climate Model Turns 50, and Predicted Global Warming Almost Perfectly*, *FORBES*, Mar. 15, 2017, available at <https://www.forbes.com/sites/startswithabang/2017/03/15/the-first-climate-model-turns-50-and-predicted-global-warming-almost-perfectly> (last accessed Oct. 31, 2022) [<https://perma.cc/MX2S-MYAG>] (citing Syukuro Manabe & Richard T. Wetherald, *Thermal Equilibrium of the Atmosphere with a Given Distribution of Relative Humidity*, 24 *J. ATMOSPHERIC SCI.* 241, 254-59 (1967)).
61. Climate Change Commission, National Framework Strategy on Climate Change 2010-2022, at 24, available at <https://faolex.fao.org/docs/pdf/phi179683.pdf> (last accessed Oct. 31, 2022) [<https://perma.cc/ZLE7-9745>]
62. *Id.*
63. *Id.*

be fully implemented, the release of greenhouse gases will be minimized by as much as 2,400,000 tons a year.⁶⁴

C. Biodiversity Loss

Biodiversity is characterized as the “number, abundance, composition, spatial distribution, and interactions of genotypes, populations, species, functional types and traits, and landscape units in a given system.”⁶⁵ Like climate change, the issue of global biodiversity loss is of “great significance that should be addressed urgently.”⁶⁶ If the world will not grapple the severity of this issue and critical thresholds are passed in ecosystems, its impacts on humanity will potentially include “widespread social unrest, economic instability[,] and extensive loss of human life.”⁶⁷

In an ideal world, “[t]here should be a smooth interaction between the built environment and the natural environment because the usual victims of biodiversity loss are humanity and nature.”⁶⁸ Unfortunately, the built environment itself has been recognized as one of the major contributors to the loss of biodiversity.⁶⁹ In fact, the sharp decline in biodiversity is due to the urbanization’s degradation of the natural layer underpinning the built environment, resulting to the loss of natural habitats.⁷⁰ Specifically, the 66%

64. *Id.*

65. Sandra Díaz, et al., *Biodiversity Loss Threatens Human Well-Being*, 4 PLOS BIOL. 1300, 1300 (2006).

66. Maibritt Pedersen Zari, *Ecosystem Services Analysis in Response to Biodiversity Loss Caused by the Built Environment*, 1 S.A.P.I.E.N.S 1, 2 (2014).

67. *Id.* at 4–5 (citing Anthony D. Barnosky, et al., *Approaching a State Shift in Earth’s Biosphere*, 486 NATURE 52, 55 (2012) (citing Allan W. Shearer, *Whether the Weather: Comments on “An Abrupt Climate Change Scenario and Its Implications for United States National Security,”* 37 FUTURES 445, 451 (2005) (Shearer states that conflicting assessments of the net impact of climate change on ecosystems offered by experts are provisional and constantly evolving.)). Shearer, *supra* note 67.

68. Alex Opoku, *Biodiversity and the Built Environment: Implications for the Sustainable Development Goals (SDGs)*, 141 RESOURCES, CONSERVATION, & RECYCLING 1, 1 & 5 (2019).

69. *Id.* at 1–2.

70. Akanksha Khatri, et al., *BiodiverCities by 2030: Transforming Cities’ Relationship with Nature* (Insight Report, Jan. 2022), at 8, available at https://www3.weforum.org/docs/WEF_BiodiverCities_by_2030_2022.pdf (last accessed Oct. 31, 2022) [<https://perma.cc/C65B-C9KC>] (citing Sandra Diaz, et al., *IPBES (2020): Summary for Policymakers of the Global Assessment Report on*

rapid area expansion of the global built environment in the first 12 years of the 21st century has significantly impacted the natural systems, the flora and the fauna, as well as the quality of air and waterways.⁷¹

This, however, does not mean that biodiversity cannot be integrated into the urban matrix.⁷² This Article advocates that through the enactment of laws and the implementation of the existing policies relating to the built environment and urban planning, the issue of biodiversity loss may be addressed, as well as the two other risks mentioned above. At this juncture, it is then necessary to scrutinize the current laws in place, as well as the pending proposed policies that may be helpful in reconciling and protecting both the built environment and the natural environment for the benefit of both people and the planet.

IV. THE PHILIPPINE LEGAL LANDSCAPE FOR BUILT ENVIRONMENT

The Philippines has been hailed as having the “toughest and most progressive international environmental laws[, among others,] in the world.”⁷³ Despite the long list of laws and policies relating to the environment adopted by the country, however, there is currently no specific law devoted expressly to the built environment, and its importance and connection with the natural environment. Perhaps the closest would be the Philippine Green Building Code,⁷⁴ which is a Referral Code of the National Building Code of the

Biodiversity and Ecosystem Services, in IPBES (2020): GLOBAL ASSESSMENT REPORT ON BIODIVERSITY AND ECOSYSTEM SERVICES xv (Eduardo Sonnewend Brondizio, et al. eds. 2019)).

71. *Id.*

72. See Diana Ruiz & Andrés Ibáñez, *Biodiversity Thrives in the Built Environment*, in BIODIVERCITIES BY 2030: TRANSFORMING CITIES WITH BIODIVERSITY 48 (Mejía Pimienta, et al. eds., 2022) (The authors of this source present conceptual approaches that address cities from a systematic perspective in which nature and biodiversity can be integrated into the urban matrix.). *Id.*

73. Consuelo Ynares-Santiago, *Framework for Strengthening Environmental Adjudication in the Philippines*, 52 ATENEO L.J. 744, 744 (2008).

74. Department of Public Works and Highways, Philippine Green Building Code, Referral Code Implementing the National Building Code of the Philippines, Presidential Decree No. 1096 (June 22, 2015) [hereinafter PHILIPPINE GREEN BUILDING CODE].

Philippines (Presidential Decree No. 1096).⁷⁵ These are discussed briefly in the subsequent sections.

A. The National Building Code and its Implementing Rules and Regulations

The purpose of the National Building Code is to provide “a framework of minimum standards and requirements to regulate and control their location, site, design quality of materials, construction, use, occupancy, and maintenance[]” for all buildings and structures in the country.⁷⁶ Aside from this declared policy, the following are the only provisions in the Code which refer to the environment —

Section 104. General Building Requirements. [—]

...

(b) Buildings or structures intended to be used for the manufacture and/or production of any kind of article or product *shall observe adequate environmental safeguards*.

...

Section 303. Processing of Building Permits. [—] The processing of building permits shall be under the overall administrative control and supervision of the Building Official and his technical staff of qualified professionals.

In processing an application for a building permit, the Building Official shall see to it that the applicant satisfies and conforms with approved standard requirements on zonings and land use, lines and grades, structural design, sanitary and sewerage, *environmental health*, electrical and mechanical safety as well as with other rules and regulations promulgated in accordance with the provisions of this Code.⁷⁷

Interestingly, the Implementing Rules and Regulations (IRR) of the National Building Code⁷⁸ contains more provisions that relate to the consideration of the environment. For instance, the IRR requires that environmental considerations — geological, hydrological, meteorological, topographical, prevailing traffic conditions, the availability and capacity of

75. Adopting a National Building Code of the Philippines (NBCP) Thereby Revising Republic Act Numbered Sixty-Five Hundred Forty-One (R.A. No. 6541) [NAT'L BLDG. CODE], Presidential Decree No. 1096 (1977).

76. *Id.* § 102.

77. *Id.* §§ 104 (b) & 303 (emphases supplied).

78. Department of Public Works and Highways, Rules and Regulations Implementing the National Building Code of the Philippines, Presidential Decree No. 1096 (1977).

public utility [or] service systems, etc. — be taken into account when determining the maximum height of buildings.⁷⁹ This seems to be an addition considering that the equivalent provision⁸⁰ in the National Building Code is silent as regards to environmental considerations during the determination of maximum height of buildings.⁸¹

Accordingly, the “[e]ffect/s of environmental conditions on the building [or] structure and [vice-versa,] coupled with the effective control of air, noise and thermal pollution, radiant heat, lights and shadows, etc., and the optimization of natural light and ventilation” are among the factors considered in the determination of the building height.⁸²

Furthermore, in the design of public buildings or structures, the IRR aims to promote, enhance, and express the environmental quality and cultural heritage of the public buildings or structures in the concerned region aside from only being logically functional and structurally sound.⁸³

Finally, and most importantly, in the classification and general requirements of all buildings by use or occupancy, the IRR necessitates in its

79. *Id.* rule vii, § 707 (1).

80. NAT’L BLDG. CODE, § 707. Section 707 reads —

Section 707. Maximum Height of Buildings.

The maximum height and number of storeys of every building shall be dependent upon the character of occupancy and the type of construction as determined by the Secretary considering population density, building bulk, widths of streets[,] and car parking requirements. The height shall be measured from the highest adjoining sidewalk or ground surface: Provided, that the height measured from the lowest adjoining surface shall not exceed such maximum height by more than [three] meters: Except, that towers, spires, and steeples, erected as part of a building and not used for habitation or storage are limited as to height only by structural design if completely of incombustible materials, or may extend not to exceed [six] meters above the height limits for each occupancy group if of combustible materials.

Id.

81. *See id.*

82. Rules and Regulations Implementing the National Building Code of the Philippines, rule vii, § 707 (3) (c) (iv).

83. *Id.* at 102, ¶ (1) (b).

matrix that a “building [or] structure with lesser negative environmental impact” shall be prioritized.⁸⁴

Aside from the National Building Code, a related framework which governs the built environment is the 2015 National Structure Code of the Philippines.⁸⁵ It is important to note, however, that this is not a law passed by Congress, but merely a document established by the Association of Structural Engineers of the Philippines, Inc. (ASEP) to address the “design and installation of structural systems through requirements emphasizing performance” that were generally borrowed from the model codes or regulations of the U.S.⁸⁶

B. The Philippine Green Building Code

The Philippine Green Building Code (Green Building Code) endeavors “to promote sustainable building regulations and to reduce greenhouse gas emissions.”⁸⁷ Unlike the National Building Code, the Green Building Code acknowledges explicitly⁸⁸ the State’s policy under the 1987 Constitution to “protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature.”⁸⁹ Its objective is also “to improve the efficiency of building performance through a framework

84. *Id.* rule vii, § 701 tbl. VII.1.

85. See ASSOCIATION OF STRUCTURAL ENGINEERS OF THE PHILIPPINES, INC., NATIONAL STRUCTURAL CODE OF THE PHILIPPINES 2015 (7th ed. 2016).

86. *Id.* at iv.

87. Rafael L. Antonio, *Greener Policies to Combat Climate Change*, PHIL. DAILY INQ., Aug. 28, 2018, available at <https://business.inquirer.net/255830/greener-policies-combat-climate-change> (last accessed Oct. 31, 2022) [<https://perma.cc/D7WT-EXDD>].

88. PHILIPPINE GREEN BUILDING CODE, § 2. The pertinent provision states —

The [S]tate shall protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature against harmful effects of climate change. It shall safeguard the environment, property, public health, in the interest of the common good and general welfare consistent with the principles of sound environmental management and control; and for this purpose, prescribe acceptable set of standards and requirements for relevant buildings to regulate their location, site, planning, design, quality of material, construction, use, occupancy, operation[,] and maintenance.

Id.

89. PHIL. CONST. art. II, § 16.

of acceptable set of standards that will enhance sound environmental and resource management that will counter the harmful gases responsible for the adverse effects of climate change[.]”⁹⁰

The Green Building Code itself neither provides for a definition of the built environment nor refers to it as a concept, except indirectly in Annex 1: Definition of Terms, where it has impliedly recognized the applicability of its provisions to the built environment —

American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) [—] global society founded in 1894, advancing human well-being through sustainable technology for the built environment with focus on building systems, energy efficiency, indoor air quality, refrigeration[,] and sustainability within the industry[.]

...

Philippine Association of Landscape Architects (PALA) [—] the integrated and accredited organization of landscape architecture professionals responsible for the advancement of the profession as an instrument of service in improving the quality of life within a better natural and built environment[.]

...

United Architects of the Philippines (UAP) [—] the Integrated and Accredited Professional Organization of Architects in the Philippines responsible in the improvement and sustainability of the quality of built environment[.]⁹¹

Nevertheless, although the Green Building Code does not pertain to the built environment per se, it serves as a useful signpost to analyze how the present Philippine laws address the intertwined relationship between the built environment and environmental protection. It introduces the concept of “green building,” defined as “the practice of adopting measures that promote resource management efficiency and site sustainability while minimizing the negative impact of buildings on human health and the environment.”⁹²

Section 19 of the Philippine Green Building Code ⁹³ is one of its pertinent provisions, for it lays down the process in acquiring the green building

90. PHILIPPINE GREEN BUILDING CODE, § 3.

91. *Id.* annex I (emphases supplied).

92. *Id.* § 6.

93. *Id.* § 19.

permit.⁹⁴ Under the cited provision, it is the Office of the Building Official that shall review the application for the permit application for green buildings, “as prepared by the design professionals in compliance with the requirements of the [Green Building] Code and the various referral codes in accordance with Rule 3 of the [National Building Code].”⁹⁵

C. Other Laws and Regulations in Relation to the Built Environment

As noted above, at first glance, one would surmise that only a handful of laws relate directly to the concept of the built environment. Other existing environmental laws and regulations, including specific action plans, however, have a direct bearing on the built environment, especially with the proposition that this concept must be considered and must take into account the environmental and climate considerations. The relevant laws and policies are discussed in the subsequent Sections.

1. The Right to Balanced and Healthful Ecology (and Built Environment?)

The Philippines, even prior the passing of the 1987 Constitution and its mandate under Article II, Section 16 which enjoins the State to protect the right to a balanced and healthful ecology,⁹⁶ had already recognized such right under Presidential Decree No. 1151 or the Philippine Environmental Policy,⁹⁷

94. The Philippine Green Building Code does not define what a “green building permit” is, although it defines a “building permit” in general as that

document issued by the Building Official (BO) to an owner/applicant to proceed with the construction, installation, addition, alteration, renovation, conversion, repair, moving, demolition or other work activity of a specific project[,] building[,] structure[,] or portions thereof after the accompanying principal plans, specifications[,] and other pertinent documents with the duly notarized application are found satisfactory and substantially conforming with the NBC and its Implementing Rules and Regulations (IRR).

Id. annex I.

95. *Id.* § 19.

96. PHIL. CONST. art. II, § 16.

97. Philippine Environmental Policy, Presidential Decree No. 1151, §§ 2 (b) & 3 (1977). The pertinent provisions are as follows —

Section 2. *Goal.* In pursuing this policy, it shall be the responsibility of the Government, in cooperation with concerned private organizations and entities, to use all practicable means, consistent with other essential considerations of national policy, in promoting the general welfare to

and Presidential Decree No. 1152, also known as the Philippine Environmental Code.⁹⁸

With regard to the *former*, the Philippine Environmental Policy recognizes the conflicting demands of urbanization and industrial expansion vis-à-vis environmental protection.⁹⁹ It further required “all agencies and instrumentalities of the national government, including government-owned or controlled corporations, as well as private corporations[,] firms[,] and entities” to prepare and file an “environmental impact statement” in every action, project, or undertaking which significantly affects the quality of the environment.¹⁰⁰

As regards the *latter*, the Philippine Environmental Code is more comprehensive in a sense that it addresses the ambient air quality standards,¹⁰¹ national emission standards,¹⁰² and community noise standards¹⁰³ produced by land use, among others. More importantly, it introduces the “National Land Use Scheme,” which vests the appropriate government agencies the power to exercise control “over the use of land in areas of critical environmental

the end that the Nation may ... assure the people of a safe, decent, healthful, productive[,] and aesthetic environment[.]

...

Section 3. *Right to a Healthy Environment.* In furtherance of these goals and policies, the Government recognizes the right of the people to a healthful environment. It shall be the duty and responsibility of each individual to contribute to the preservation and enhancement of the Philippine environment.

Id.

98. Philippine Environmental Code, Presidential Decree No. 1152, § 25 (a) (1977). Section 25 provides —

Section 25. Purposes — The purposes of this Title are:

...

(a) to provide the basic policy on the management and conservation of the country’s natural resources to obtain the optimum benefits therefrom and to preserve the same for the future generations[.]

Id.

99. Philippine Environmental Policy, whereas cl. para. 1.

100. *Id.* § 4.

101. Philippine Environmental Code, § 3.

102. *Id.* § 4.

103. *Id.* § 5.

concern and areas impacted by public facilities including, but not limited to, airports, highways, bridges, ports and wharves, buildings and other infrastructure projects[.]”¹⁰⁴ The scheme also requires that there be a system of controls and regulations designed to ensure that “any source of pollution will not be located where it would result in a violation of any applicable environmental pollution control regulations[.]”¹⁰⁵

2. The Philippine Environmental Impact Statement System

Presidential Decree No. 1586¹⁰⁶ is also worth noting in discussing built environment vis-à-vis environmental protection. This Decree establishes an Environmental Impact Statement System¹⁰⁷ founded and based on the Philippine Environmental Policy.¹⁰⁸ What is unique about Presidential Decree No. 1586 is that it provides for a penal clause¹⁰⁹ for the violation of its provision, especially regarding the failure to secure an Environmental Compliance Certificate (ECC), which is a document issued by the President or his duly authorized representative.¹¹⁰

104. *Id.* § 23 (e).

105. *Id.* § 23 (h).

106. Establishing an Environmental Impact Statement System, Including Other Environmental Management Related Measures and for Other Purposes, Presidential Decree No. 1586 (1987).

107. *Id.* § 2.

108. Philippine Environmental Policy, § 4.

109. Presidential Decree No. 1586, § 9. The pertinent provision states —

Section 9. *Penalty for Violation.* — Any person, corporation[,] or partnership found violating Section 4 of this Decree, or the terms and conditions in the issuance of the Environmental Compliance Certificate, or of the standards, rules and regulations issued by the National Environmental Protection Council pursuant to this Decree shall be punished by the suspension or cancellation of his/its certificate or and/or a fine in an amount not to exceed Fifty Thousand Pesos (₱50,000.00) for every violation thereof, at the discretion of the National Environmental Protection Council.

Id.

110. *Id.* § 4. The pertinent section states —

Section 4. *Presidential Proclamation of Environmentally Critical Areas and Projects.* — The President of the Philippines may, on his own initiative or upon recommendation of the National Environmental Protection

P.D. No. 1586 requires the national government, including all of its agencies and instrumentalities, as well as government-owned or controlled corporations, private corporations, firms and entities, to provide an environmental impact statement system for “every proposed project and undertaking which significantly affect[s] the quality of the environment.”¹¹¹ The said decree also bestows to the President the power to declare certain projects, undertakings, or areas in the Philippines as “environmentally critical.”¹¹² Once a project, undertaking, or area is considered environmentally critical, there is a need for the person, partnership, or corporation undertaking or operating therein to first secure an ECC issued by the President or his duly authorized representative.¹¹³

Accordingly, it was only three years later in 1981 when Presidential Proclamation No. 2146 was issued, which gave the technical definition of Environmentally Critical Projects (ECPs) and Environmentally Critical Areas (ECAs).¹¹⁴

Council, by proclamation declare certain projects, undertakings[,] or areas in the country as environmentally critical. No person, partnership[,] or corporation shall undertake or operate any such declared environmentally critical project or area without first securing an Environmental Compliance Certificate issued by the President or his duly authorized representative. For the proper management of said critical project or area, the President may by his proclamation reorganize such government offices, agencies, institutions, corporations[,] or instrumentalities including the re[]alignment of government personnel, and their specific functions and responsibilities.

For the same purpose as above, the Ministry of Human Settlements shall: (a) prepare the proper land or water use pattern for said critical project(s) or area(s); (b) establish ambient environmental quality standards; (c) develop a program of environmental enhancement or protective measures against calamitous factors such as earthquake, floods, water erosion[,] and others[;] and (d) perform such other functions as may be directed by the President from time to time.

Id.

111. *Id.* § 2.

112. *Id.* § 4.

113. Presidential Decree No. 1586, § 4.

114. Proclaiming Certain Areas and Types of Projects as Environmentally Critical and Within the Scope of the Environmental Impact Statement System Established Under Presidential Decree No. 1586, Presidential Proclamation No. 2146, Series of 1981 [P.P. No. 2146, s. 1981], tit. A, subtit. I-III (Dec. 18, 1981).

The Environmental Impact Statement (EIS) is characterized as a “comprehensive study of the significant impacts of a subproject on the environment.”¹¹⁵ Simply, it is a document that is prepared and submitted by a project proponent and/or an Environmental Impact Assessment (EIA) consultant, which serves as an application for an ECC.¹¹⁶ The EIA process assures the implementation of environmentally-sound projects and environmental protection is among its major benefits, specifically ensuring that issues surrounding the environment are taken into account in accepting or modifying a project, and that the project complies with the principles of sustainable development.¹¹⁷

The EIA or the Philippine Environmental Impact Statement System (PEISS) is considered supplementary to existing laws.¹¹⁸ This is because as early as its feasibility stage, it already identifies the possible issues or impacts that may be covered by subsequent regional environmental permits.¹¹⁹ It likewise covers environmental protection and enhancement-related issues whenever there are no standards available yet under the existing laws, or when there is a lack of explicit definitions as provided by the statutes.¹²⁰ An example given by the Environmental Impact Assessment and Management Division is the fact that the planting of greenbelts is not required under any environmental law but under the ECC, it is included as a contractual obligation of the project

115. Local Water Utilities Administration, Philippines: Water District Development Sector Project (March 2014), at *6, *available at* <https://www.adb.org/sites/default/files/linked-documents/41665-013-earfab.pdf> (last accessed Oct. 31, 2022) [<https://perma.cc/3H4M-DQY9>].

116. *Id.* at *6-7.

117. Environmental Management Bureau, Philippine Environmental Impact Statement System (PEISS): Implications for Local Government, Women and Small Business Establishments, at 3, *available at* <https://emb.gov.ph/wp-content/uploads/2021/03/Philippine-Environmental-Impact-Statement-System-Brochure.pdf> (last accessed Oct. 31, 2022) [<https://perma.cc/3R7C-7YG7>].

118. Environmental Management Bureau: Environmental Impact Assessment and Management Division, What You Should Know About Environmental Impact Assessment (EIA) and Environmental Compliance Certificate, at *5, *available at* <http://web.archive.org/web/20220608001828/https://eia.emb.gov.ph/wp-content/uploads/2016/06/eia-ecc.pdf> (last accessed Oct. 31, 2022) [hereinafter Philippine Environmental Impact Statement System].

119. *Id.*

120. *Id.*

proponent to the Department of Environment and Natural Resources (DENR).¹²¹

3. Expanded National Integrated Protected Areas System Act of 2018 (E-NIPAS)

Another important law relevant to the built environment is the Expanded National Integrated Protected Areas System Act of 2018 (E-NIPAS Act).¹²² Interestingly, neither the E-NIPAS Act¹²³ nor its Implementing Rules and Regulations (E-NIPAS IRR)¹²⁴ makes any reference to the built environment. This is despite the fact that under Section 2 of the said law, the State's declared policy is "[c]ognizant of the profound impact of human activities on all components of the *natural environment*."¹²⁵ Moreover, the scope of the National Integrated Protected Areas System (NIPAS) being established under the same provision only encompasses "ecologically rich and unique areas and biologically important public lands that are habitats of rare and threatened species of plants and animals, biogeographic zones, and related ecosystems, whether terrestrial, wetland or marine, all of which shall be designated as 'protected areas.'"¹²⁶

Section 4 of the amendatory law further elaborates the establishment and extent of the said System.¹²⁷ There are notably two ways in order for an area or island in the Philippines to be considered as a "protected area." *First*, there must be a law, presidential decree, presidential proclamation, or executive

121. *Id.*

122. An Act Declaring Protected Areas and Providing for Their Management, Amending for this Purpose Republic Act No. 7586, Otherwise Known as the "National Integrated Protected Areas System (NIPAS) Act of 1992" and for Other Purposes [Expanded National Integrated Protected Areas System Act of 2018], Republic Act No. 11038 (2018).

123. *Id.*

124. Department of Environment and Natural Resources, Rules and Regulations Implementing the National Integrated Protected Areas System (NIPAS) Act of 1992, as Amended by Republic Act No. 11038, or the Expanded National Integrated Protected Areas System (E-NIPAS) Act of 2018, Republic Act No. 11038 (2019).

125. Expanded National Integrated Protected Areas System Act of 2018, § 2 (emphasis supplied).

126. *Id.*

127. *Id.* § 4.

order proclaiming, designating, or setting it aside as such.¹²⁸ The *second* manner in which it may be deemed as a “protected area” is when it is one of those enumerated in the table provided under Section 5 (a.1.) of the E-NIPAS Act, duly certified as accurate by the National Mapping and Resource Information Authority (NAMRIA).¹²⁹ There are at present eight categories of protected areas established under the NIPAS.¹³⁰

128. *See id.* The pertinent provision states —

Section 4. Section 5 of Republic Act No. 7586 is hereby amended to read as follows —

‘Sec[ti]on] 5. Establishment and Extent of the System. — The establishment and operationalization of the System shall involve the following:

(a) All areas or islands in the Philippines proclaimed, designated[,] or set aside, pursuant to a law, presidential decree, presidential proclamation[,] or executive order as national park, game refuge, bird and wildlife sanctuary, wilderness area, strict nature reserve, watershed, mangrove reserve, fish sanctuary, natural and historical landmark, protected and managed landscape/seascape[,] as well as old growth forests identified before the effectivity of this Act or still to be identified, are hereby designated as initial components of the System. The initial components of the System shall be governed by existing laws, rules, and regulations, not inconsistent with this Act.’

Id.

129. *See id.*

130. DENR-Biodiversity Management Bureau, Facebook Post, FACEBOOK, Apr. 23, 2020, *available at* <https://www.facebook.com/denrbiodiversity/photos/here-are-the-following-categories-of-protected-areas-based-on-the-nipas-act-1-st/2609253019401753> (last accessed Oct. 31, 2022) [<https://perma.cc/3E3X-77ET>]. *See also* An Act Providing for the Establishment and Management of National Integrated Protected Areas System, Defining its Scope and Coverage, and for Other Purposes [National Integrated Protected Areas System Act of 1992], Republic Act No. 7586, § 4 (1992) (as amended).

- (1) ‘Strict nature reserve’ — an area possessing some outstanding ecosystem, features[,] and/or species of flora and fauna of national scientific importance maintained to protect nature and maintain processes in an undisturbed state in order to have ecologically representative examples of the natural environment available for scientific study, environmental monitoring, education, and for the maintenance of genetic resources in a dynamic and evolutionary state.
- (2) ‘Natural park’ — a relatively large area not materially altered by human activity where extractive resource uses are not allowed and

While the E-NIPAS Act allows the DENR to recommend additional areas to be included in the System, such recommendation is subject to the following conditions: (1) such additional areas must be with “unique physical features, anthropological significance[,] and high biological diversity;” and (2) such additional areas shall “undergo the same procedure as the remaining initial components for legislative enactment.”¹³¹

Once the protected areas are considered “environmentally critical areas,” the proponent of development projects and activities with potentially significant adverse impacts are required to secure an ECC in accordance with the PEISS, regardless of whether or not these projects or activities are included in the management plan.¹³² Whether or not a certain project or activity has

maintained to protect outstanding natural and scenic areas of national or international significance for scientific, educational[,] and recreational use.

- (3) ‘Natural monuments’ — a relatively small area focused on protection of small features to protect or preserve nationally significant natural features on account of their special interest or unique characteristics.
- (4) ‘Wildlife sanctuary’ — comprises an area which assures the natural conditions necessary to protect nationally significant species, groups of species, biotic communities[,] or physical features of the environment where these may require specific human manipulations for their perpetuation.
- (5) ‘Protected landscapes/seascapes’ — areas of national significance[,] which are characterized by the harmonious interaction of man and land while providing opportunities for public enjoyment through the recreation and tourism within the normal lifestyle and economic activity of these areas.
- (6) ‘Resource reserve’ — an extensive and relatively isolated and uninhabited area normally with difficult access designated as such to protect natural resources of the area for future use and prevent or contain development activities that could affect the resource pending the establishment of objectives which are based upon appropriate knowledge and planning.
- (7) ‘Natural biotic area’ — an area set aside to allow the way of life of societies living in harmony with the environment to adapt to modern technology at their pace.
- (8) Other categories established by law, conventions or international agreements to which the Philippine Government is signatory.

Id. §§ 3 (h), (w) & 4 (jj), (y), (x), (oo), (ee).

131. Expanded National Integrated Protected Areas System Act of 2018, § 4.

132. *Id.* § 11.

potentially significant adverse impacts would be determined by the Environmental Management Bureau (EMB).¹³³

In the event that a project or activity is not environmentally critical, an *initial environmental examination* (IEE) is still required to be undertaken in lieu of a full-blown EIA.¹³⁴ Nevertheless, a prior clearance from the Protected Area Management Board (PAMB) is always required before a proponent may undertake a certain project or activity, and the DENR shall require the submission of such PAMB clearance, among others, before issuing an ECC to a project proponent.¹³⁵

4. The Climate Change Act

As previously discussed, climate change is one of the most pressing concerns which impacts the built environment in more ways than one. Similar with the E-NIPAS Act, however, the Climate Change Act¹³⁶ is silent with regard to its applicability to the built environment. A perusal of this statute's provisions would easily reveal that the State's policy to afford full protection and advance the people's right to a healthful ecology is by "fulfill[ing] human needs while maintaining the quality of the *natural environment* for current and future generations."¹³⁷

Nevertheless, the said Act also calls upon the State to "strengthen, integrate, consolidate[,] and institutionalize government initiatives to achieve coordination in the implementation of plans and programs to address climate change in the context of sustainable development."¹³⁸ The government, along with its agencies and instrumentalities are mandated to "systematically integrate the concept of climate change in various phases of policy formulation, development plans, poverty reduction strategies[,] and other development tools and techniques."¹³⁹

133. *Id.*

134. *Id.*

135. *Id.*

136. An Act Mainstreaming Climate Change Into Government Policy Formulations, Establishing the Framework Strategy and Program on Climate Change, Creating for this Purpose the Climate Change Commission, and for Other Purposes [Climate Change Act of 2009], Republic Act No. 9729 (2009).

137. *Id.* § 2 (emphasis supplied).

138. *Id.*

139. *Id.*

Climate change is defined herein as “a change in climate that can be identified by changes in the mean and/or variability of its properties and that persists for an extended period typically decades or longer, whether due to natural variability or as a result of human activity.”¹⁴⁰ Worth noting is that the definition provided by law neither distinguishes between the built and unbuilt environment, nor gives any distinction as to its applicability between the natural and the built environment.

To reiterate, Gellers had already pointed out that there is nothing that prevents rights from being extended from the real or the natural to the domain of the artefactual.¹⁴¹ While an overview of lexical variations found among national constitutions (and even domestic laws) would suggest that these rights were crafted to reflect a deliberate emphasis on nature, this does not mean that a “balanced” ecological system is only limited to the protection of the natural environment.¹⁴² Furthermore, Erin Daly & James R. May noted that “the more the built environment around people is clean and healthy, the more likely people are ... able to fully develop their personalities — a key determinant of human dignity.”¹⁴³

Therefore, in mandating the government, its agencies, as well as its instrumentalities to systematically integrate the concept of climate change in various phases of policy formulation, it can be inferred that the Climate Change Act extends its application even to the built environment because there is nothing therein which precludes it from doing so.¹⁴⁴ While its declared policy under the first paragraph of Section 2 only mentions the maintenance of the quality of the *natural environment*, it can be deduced from other provisions that the law was not strictly applicable only to the natural environment.¹⁴⁵ For instance, the same cited provision provides that the State adopts the ultimate objective of the UNFCCC,¹⁴⁶ which is

the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate

140. *Id.* § 3 (d).

141. *See, e.g.*, Gellers, *supra* note 21 at 244-45.

142. *Id.*

143. Erin Daly & James R. May, *Environmental Dignity Rights*, at 20 (Dec. 14, 2016) (unpublished research paper, Widener University) (on file with the Widener University, Delaware School of Law).

144. Climate Change Act of 2009, § 2.

145. *Id.*

146. UNFCCC, art. 1 (2).

system which should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.¹⁴⁷

The stabilization of these greenhouse gas concentrations does not only pertain to the natural environment.¹⁴⁸ In fact, globally, it is the built environment which generates 37% of the annual CO₂ emissions,¹⁴⁹ the primary greenhouse gas emitted through human activities.¹⁵⁰ Thus, it can safely be concluded that climate change and climate considerations need to also be considered in the discussions surrounding the built environment.

a. Philippine Disaster Risk Reduction and Management Act of 2010

Another notable provision in the Climate Change Act is its recognition of the closely interrelated relationship between climate change and disaster risk reduction, acknowledging that “effective disaster risk reduction will enhance climate change adaptive capacity.”¹⁵¹ Republic Act No. 10121 or the Philippine Disaster Risk Reduction and Management Act of 2010 is the law governing the national disaster risk reduction and management system of the country.¹⁵²

While the Philippine Disaster Risk Reduction and Management Act of 2010 does not expressly pertain to the built environment, a number of its

147. Climate Change Act of 2009, § 2.

148. Patrick Henry, Why Building Greener is Crucial to Meeting Paris Climate Targets, *available at* <https://www.weforum.org/agenda/2021/11/green-building-global-warming-climate-change> (last accessed Oct. 31, 2022) [<https://perma.cc/FE4D-NHXM>].

149. *Id.*

150. United States Environmental Protection Agency, Greenhouse Gas Emissions: Overview of Greenhouse Gases, *available at* <https://www.epa.gov/ghgemissions/overview-greenhouse-gases> (last accessed Oct. 31, 2022) [<https://perma.cc/N2DX-5KWN>].

151. Climate Change Act of 2009, § 2.

152. An Act Strengthening the Philippine Disaster Risk Reduction and Management System, Providing for the National Disaster Risk Reduction and Management Framework and Institutionalizing the National Disaster Risk Reduction and Management Plan, Appropriating Funds Therefor and for Other Purposes [Philippine Disaster Risk Reduction and Management Act of 2010], Republic Act No. 10121 (2010).

provisions relate to the disaster prevention of buildings and infrastructures in the built environment, including —

Section 2. *Declaration of Policy.* — It shall be the policy of the State to:

...

(g) Mainstream disaster risk reduction and climate change in development processes such as policy formulation, socioeconomic development planning, budgeting, and governance, particularly in the areas of environment, agriculture, water, energy, health, education, poverty reduction, *land-use and urban planning, and public infrastructure and housing*, among others[.]

...

Section 3. *Definition of Terms.* — For purposes of this Act, the following shall refer to:

...

(k) ‘Disaster Prevention’ — the outright avoidance of adverse impacts of hazards and related disasters. It expresses the concept and intention to completely avoid potential adverse impacts through action taken in advance such as construction of dams or embankments that eliminate flood risks, land-use regulations that do not permit any settlement in high-risk zones, and seismic engineering designs that ensure the survival and function of a critical building in any likely earthquake.

...

(x) ‘Mitigation’ — structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation, and technological hazards and to ensure the ability of at-risk communities to address vulnerabilities aimed at minimizing the impact of disasters. Such measures include, but are not limited to, hazard-resistant construction and engineering works, the formulation and implementation of plans, programs, projects and activities, awareness raising, knowledge management, policies on land-use and resource management, as well as the enforcement of comprehensive land-use planning, building and safety standards, and legislation.

...

(ee) ‘*Rehabilitation*’ — measures that ensure the ability of affected communities/areas to restore their normal level of functioning by rebuilding livelihood and *damaged infrastructures* and increasing the communities’ organizational capacity.

...

(nn) ‘*Vulnerability*’ — the characteristics and circumstances of a community, system[,], or asset that make it susceptible to the damaging effects of a hazard.

Vulnerability may arise from various physical, social, economic, and environmental factors such as poor design and construction of *buildings*, inadequate protection of assets, lack of public information and awareness, limited official recognition of risks and preparedness measures, and disregard for wise environmental management.

...

Section 17. *Remedial Measures*. — The declaration of a state of calamity shall make mandatory the [i]mmediate undertaking of the following remedial measures by the member-agencies concerned as defined in this Act:

...

(c) Programming/reprogramming of funds for the repair and safety upgrading of *public infrastructures* and facilities[.]¹⁵³

The fact that the provisions of the Philippine Disaster Risk Reduction and Management Act of 2010 pertains necessarily to the built environment — albeit impliedly — bolsters the argument that the Climate Change Act is also applicable to the built environment because Section 2 of the latter provides that the State shall integrate disaster risk reduction into climate change programs and initiatives.¹⁵⁴

b. National Climate Change Action Plan

Under Sections 13 and 14 of the Climate Change Act, respectively, the National Climate Change Commission is called upon to formulate a National Climate Change Action Plan, while the local government units (LGUs) are considered as the frontline agencies in the “formulation, planning[,] and implementation of climate change action plans in their respective areas, consistent with the provisions of the Local Government Code, the Framework, and the National Climate Change Action Plan.”¹⁵⁵

A National Climate Change Action Plan (NCCAP) was brought into being by the Climate Change Commission, which provides for the country’s strategic direction for 2011 to 2028.¹⁵⁶ Some of the ultimate outcomes of the NCCAP is to enhance the adaptive capacity of communities, the resilience of natural ecosystems, and more importantly, the sustainability of the built

153. *Id.* §§ 2 (g), 3 (k), (x), (ee), (nn), & 17 (c) (emphases supplied).

154. Climate Change Act of 2009, § 2.

155. *Id.* §§ 13-14.

156. Climate Change Act of 2009, § 13. See CLIMATE CHANGE COMMISSION, NATIONAL CLIMATE CHANGE ACTION PLAN: 2011-2028 (2011).

environment to climate change.¹⁵⁷ The Action Plan likewise advocates that “green cities and municipalities be developed, promoted[,] and sustained.”¹⁵⁸ In doing so, it recommends the following:

- (1) the implementation of climate change adaptive housing and land use development;
- (2) the enforcement of climate-smart ridge-to-reef sustainability plan for cities and municipalities;
- (3) the implementation of mixed-used, medium-to-high density integrated land use-transport plan in developing new urban communities or in expanding existing ones; and
- (4) the enforcement of green building principles in community development.¹⁵⁹

Another suggestion of the NCCAP relates to energy efficiency and conservation.¹⁶⁰ In fact, the Philippine Energy Plan that sets 10% energy savings on the total annual energy demand of all government institutions is expected to reduce the total CO₂ emission by 12,446,357 kilotons of oil equivalent (KtOe) around 2030.¹⁶¹ Furthermore, climate-proofing of local infrastructures and rehabilitation of energy systems infrastructures are also some of the activities sought to be implemented by the NCCAP, among others.¹⁶²

c. Local Climate Change Action Plan

The Climate Change Action Plan encompasses both the national and local level.¹⁶³ One of the local climate change action plans that is promulgated in response to Section 14 of the Climate Change Act and in urgency for action on climate change would be the 2015-2025 Local Climate Change Action Plan (LCCAP) of the Municipality of Belison, Antique.¹⁶⁴ While the LCCAP does not expressly pertain to the built environment — its regulation,

157. *Id.* at 62, 78, 85, 91, & 114.

158. *Id.* at 21.

159. *Id.* at 21 fig. 8.

160. *Id.* at 27.

161. *Id.* at 27 tbl. 2.

162. CLIMATE CHANGE COMMISSION, *supra* note 156, at 6 & 99.

163. *Id.*

164. MUNICIPALITY OF BELISON, LOCAL CLIMATE CHANGE ACTION PLAN: 2015-2025 (2015).

conservation, and/or preservation — the 10-year local action plan recognizes that “[i]n terms of critical infrastructures prone to flooding, nearly every structure is within the flood hazard areas for Belison.”¹⁶⁵

In this municipality, only two barangays — Buenavista and Mojon — are outside of the flood hazard areas, but are nevertheless not exempt from the effects of localized flooding.¹⁶⁶ While the two may not be within flood hazard areas, they especially face a threat of rain-induced landslides.¹⁶⁷ Other buildings such as government building, education facility, medical facility, private residences, as well as some business face some risk of flooding.¹⁶⁸

Given the flooding in the municipality, as well as the occurrence of other natural disasters such as typhoons with strong winds, one of the programs or projects of the LCCAP is the “localization of building codes to adjust building design, especially houses, according to local climatic conditions (i.e., range of wind speeds during typhoon).”¹⁶⁹

d. Other Climate Change Action Plans

Interestingly, even regions in the country have their own physical framework plan, which embodies the enhanced features of both disaster risk reduction and climate change adaptation.¹⁷⁰ One of these would be the CALABARZON Regional Physical Framework Plan (RPPF) 2017-2046,¹⁷¹ which serves as a guide in promoting a sustainable pattern of development throughout the said region.

While the RPPF is not created pursuant to the Climate Change Act,¹⁷² one of its guiding principles and general assumptions is to promote a

¹⁶⁵. *Id.* at 14.

¹⁶⁶. *Id.*

¹⁶⁷. *Id.*

¹⁶⁸. *Id.*

¹⁶⁹. *Id.* at 27.

¹⁷⁰. See REGIONAL DEVELOPMENT COUNCIL-REGION IV-A (CALABARZON), CALABARZON REGIONAL PHYSICAL FRAMEWORK PLAN: 2017-2046 (2017).

¹⁷¹. *Id.*

¹⁷². A perusal of the RPPF reveals that it was *not* enacted pursuant to the Climate Change Act. See Regional Development Council-Region IV-A (CALABARZON), Approving the Updated CALABARZON Disaster Risk Reduction and Climate Change Adaptation Enhanced Regional Physical Framework Plan 2017-2046, RDC Resolution No. IV-A-205-2018, Series of 2018 [RDC Res. No. IV-A-205-2018, s. 2018] (Dec. 6, 2018).

sustainable pattern of development throughout the region which allows for the maximization and best use of the built environment and infrastructure “without sacrificing environmental quality and historical heritage to improve the quality of the urban environment.”¹⁷³ Considering that this framework is designed to withstand longevity, one of its overall goals for the region’s development is to make its built environment “high quality” by creating and strengthening “vibrant, robust[,] and culturally stimulating centers or communities[.]”¹⁷⁴

The said Regional Action Plan does not preclude the built environment from reaping the benefits that are enjoyed by the national environment, even to the extent of claiming that “[m]anaging both the unbuilt and built environment requires good governance.”¹⁷⁵ As such, its four policy areas — protected areas, settlement areas, infrastructure areas, and production areas — are integrated into both the built and unbuilt environments.¹⁷⁶ Additionally, in preserving both the natural and the built environment, the RPPF endeavors to “[p]romote ecotourism and agritourism as a strategy” in achieving this goal.¹⁷⁷

5. Other Related Laws

Other green building laws and regulations include the Code of Sanitation of the Philippines,¹⁷⁸ the Revised National Plumbing Code of 1999,¹⁷⁹ the Fire

173. REGIONAL DEVELOPMENT COUNCIL-REGION IV-A (CALABARZON), *supra* note 170, at 3.

174. *Id.* at 7.

175. *Id.* at 130.

176. *Id.*

177. *Id.* at 174.

178. Code on Sanitation [SANITATION CODE], Presidential Decree No. 856 (1975).

179. Professional Regulation Commission, Board of Master Plumbers, Rules and Regulations Implementing An Act to Regulate the Trade of Master Plumber, Republic Act No. 1378, at xi (2000). “The basic goal of the 1999 National Plumbing Code of the Philippines is to ensure the unqualified observance of the latest provisions of the plumbing and environmental laws.” *Id.* at xi.

Code of the Philippines,¹⁸⁰ the Philippine Clean Air Act of 1999,¹⁸¹ the Water Code of the Philippines,¹⁸² the National Water Crisis Act,¹⁸³ and the Philippine Clean Water Act of 2004.¹⁸⁴

In 2021, the Department of Energy, with the support of the European Union (EU) published the Guidelines on Energy Conserving Design of Buildings which was in consultation with the DENR, as well as other government agencies.¹⁸⁵ While the Guidelines aim for energy efficiency and conservation of buildings, a scrutiny of its contents reveal that there is a dearth of any instructions as to environmental protection per se or at least an acknowledgement of the environmental principles.

D. The Low-Hanging Fruits: Pending Senate & House Bills

Aside from the existing laws in place, there are also pending measures lodged in both Houses of Congress relating to the built environment vis-à-vis environmental protection. Most of these bills are a reiteration from the previous Congress.

180. An Act Establishing a Comprehensive Fire Code of the Philippines, Repealing Presidential Decree No. 1185 and for Other Purposes [FIRE CODE], Republic Act No. 9514 (2008).

181. An Act Providing for a Comprehensive Air Pollution Control Policy and for Other Purposes [Philippine Clean Air Act of 1999], Republic Act No. 8749 (1999).

182. A Decree Instituting a Water Code, Thereby Revising and Consolidating the Laws Governing the Ownership, Appropriation, Utilization, Exploitation, Development, Conservation[,] and Protection of Water Resources [WATER CODE], Presidential Decree No. 1067 (1976).

183. An Act to Address the National Water Crisis and for Other Purposes [National Water Crisis Act of 1995], Republic Act No. 8041 (1995).

184. An Act Providing for a Comprehensive Water Quality Management and for Other Purposes [Philippine Clear Water Act of 2004], Republic Act No. 9275 (2004).

185. Department of Energy, Guidelines on Energy Conserving Design of Buildings (2020 Edition User Manual), at 67 available at https://www.doe.gov.ph/sites/default/files/pdf/energy_efficiency/Building%20Guidelines%20User%20Manual_Final%20Pass.pdf (last accessed Oct. 31, 2022) [<https://perma.cc/QGB6-T2VC>].

For example, the Greening Act has been championed since the 13th Congress through Senate Bill Nos. 927,¹⁸⁶ 657,¹⁸⁷ 721,¹⁸⁸ 477,¹⁸⁹ and 222.¹⁹⁰ In some bills, it is referred to as “The Green Building Act,”¹⁹¹ and in some instances, it is called “The Philippine Green Building Act.”¹⁹²

There are also the proposed bills entitled “Urban Greening Act,”¹⁹³ the “Greening of Philippine Highways Act,”¹⁹⁴ the “Green Parks

186. An Act Providing for the Urban and Countryside Greening in the Philippines, S.B. No. 927, 13th Cong., 1st Reg. Sess. (2004).

187. An Act Requiring the Planting of Trees in Open Spaces of Subdivision Projects Developed for Residential, Industrial, or Commercial Purpose, and for Other Purposes, S.B. No. 657, 13th Cong., 1st Reg. Sess. (2004).

188. An Act Requiring the Planting of Trees in Open Spaces of Subdivision Projects Developed for Residential, Industrial, or Commercial Purpose, and for Other Purposes, S.B. No. 721, 13th Cong., 1st Reg. Sess. (2004).

189. An Act Providing for the Urban and Countryside Greening in the Philippines, S.B. No. 477, 14th Cong., 1st Reg. Sess. (2007).

190. *Id.*

191. *See* An Act Establishing a Green Building Standard for Government Building Projects in the Country, S.B. No. 895, 18th Cong., 1st Reg. Sess. (2019) & An Act Requiring the Planting of Trees in Open Spaces of Subdivision Projects Developed for Residential, Industrial, or Commercial Purpose, and for Other Purposes, H.B. No. 7373, 17th Cong., 3d Reg. Sess. (2018).

192. *See* An Act Establishing a National Green Building Code and Rating System, and for Other Purposes, S.B. No. 3251, 15th Cong., 3d Reg. Sess. (2012) & An Act Establishing a National Green Building Code and Rating System, and for Other Purposes, S.B. No. 410, 16th Cong., 1st Reg. Sess. (2013).

193. An Act Mandating the Submission of a Greening Plan as a Requirement for the Issuance of a Building Permit, S.B. No. 1980, 18th Cong., 2d Reg. Sess. (2021).

194. An Act Requiring Local Governments to Plant Trees Along National and Local Highways Within Its Territorial Boundaries and for Other Purposes, S.B. No. 286, 13th Cong., 1st Reg. Sess. (2004); An Act Requiring Local Governments to Plant Trees Along National and Local Highways Within Its Territorial Boundaries and for Other Purposes, S.B. No. 720, 13th Cong., 1st Reg. Sess. (2004); & An Act Requiring Local Governments to Plant Trees Along National and Local Highways Within Its Territorial Boundaries and for Other Purposes, S.B. No. 785, 14th Cong., 1st Reg. Sess. (2007).

Act,”¹⁹⁵ the “Subdivision Green Parks Act of 2005,”¹⁹⁶ the “Green Energy for Homes and Buildings Act of 2009,”¹⁹⁷ the “Barangay Greening and Forest Land Rehabilitation and Protection Act,”¹⁹⁸ as well as the “Getting Youth Re-invested in Environmental Education Now Act” or the “GREEN Act.”¹⁹⁹

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195. An Act Granting Incentives to Subdivision Homeowners Associations to Develop and Maintain Forested Areas Within Their Subdivisions, and for Other Purposes, S.B. No. 724, 13th Cong., 1st Reg. Sess. (2004); An Act Granting Incentives to Subdivision Homeowners Associations to Develop and Maintain Forested Areas Within Their Subdivisions, and for Other Purposes, S.B. No. 1133, 13th Cong., 1st Reg. Sess. (2004); & An Act Granting Incentives to Subdivision Homeowners Associations to Develop and Maintain Forested Areas Within Their Subdivisions, and for Other Purposes, S.B. No. 274, 14th Cong., 1st Reg. Sess. (2007).
196. An Act Granting the Subdivision Green Parks Program, Granting Incentives for the Planting of Trees and the Development and Maintenance of Forested Areas Within Their Subdivisions, and for Other Purposes, H.B. 4074, 13th Cong., 1st Reg. Sess. (2004) & An Act Granting the Subdivision Green Parks Program, Granting Incentives for the Planting of Trees and the Development and Maintenance of Forested Areas Within Their Subdivisions, and for Other Purposes, H.B. 5207, 14th Cong., 2d Reg. Sess. (2007).
197. An Act Establishing a Green Energy for Homes and Buildings Program in the Department of Energy to Provide Financial Assistance to Promote Residential, Commercial, and Industrial Scale Energy Efficiency and On-Site Renewable Technologies, S.B. No. 3516, 14th Cong., 3d Reg. Sess. (2009); An Act Establishing a Green Energy for Homes and Buildings Program in the Department of Energy to Provide Financial Assistance to Promote Residential, Commercial, and Industrial Scale Energy Efficiency and On-Site Renewable Technologies, S.B. No. 1799, 15th Cong., 1st Reg. Sess. (2019); & An Act Establishing a Green Energy for Homes and Buildings Program in the Department of Energy to Provide Financial Assistance to Promote Residential, Commercial, and Industrial Scale Energy Efficiency and On-Site Renewable Technologies, S.B. No. 3105, 16th Cong., 3d Reg. Sess. (2016).
198. An Act to Promote Greening and Forestland Rehabilitation and Protection in the Barangay Level, Spurring Local Climate Change Action, Appropriating Funds Therefor and for Other Purposes, S.B. No. 6, 15th Cong., 1st Reg. Sess. (2010) & An Act to Promote Greening and Forestland Rehabilitation and Protection in the Barangay Level, Spurring Local Climate Change Action, Appropriating Funds Therefor and for Other Purposes, S.B. No. 434, 17th Cong., 1st Reg. Sess. (2016).
199. An Act to Enhance Environmental Justice Education in High Schools That Serve Disadvantaged Students, S.B. No. 2438, 14th Cong., 2d Reg. Sess. (2008) & An

Moreover, the notions of a “Green Rooftop Act,”²⁰⁰ a “Green Community Act of 2012,”²⁰¹ and the creation of the “Green Building Code Commission”²⁰² have also been forwarded by some Senators.

A perusal of these bills will show that none of these measures refer to the built environment in explicit terms. It was only in 2022 during the 18th Congress when the concept of the built environment was advocated for through Senate Bill Nos. 2481,²⁰³ 2517,²⁰⁴ and 1050²⁰⁵ pushing for the creation of the “Council for the Built Environment.”²⁰⁶ These bills uniformly defined the built environment as the “field within which the registered professionals practice their profession.”²⁰⁷ It is important to note, however, that these bills championed by Senators Sherwin T. Gatchalian and Richard J. Gordon pertain strictly to the establishment of a Council that administratively supervises the Built Environment Professions — its objectives, functions, powers, duties, composition, manner of appointment and removal of members, as well as disqualification, vacation, and filling of vacancies.²⁰⁸

Act to Enhance Environmental Justice Education in High Schools That Serve Disadvantaged Students, S.B. No. 1674, 15th Cong., 1st Reg. Sess. (2010).

200. An Act Promoting Green Rooftops on All New Commercial, Industrial, and Government-Owned Buildings in the Country, S.B. No. 446, 17th Cong., 1st Reg. Sess. (2016).

201. An Act Compelling Intermediate Grade Schoolers, Secondary, Vocational and College Students to Plant Trees in an Open Space of the Community as Part of Their Curriculum and as Prerequisites for Graduation and for Other Purposes, S.B. No. 3191, 15th Cong., 2d Reg. Sess. (2012).

202. An Act to Create the Green Building Code Commission to Draft the National Green Building Code, S.B. No. 2574, 15th Cong., 1st Reg. Sess. (2010).

203. An Act Creating the “Council for the Built Environment,” Appropriating Funds Therefor, and for Other Purposes, S.B. No. 2481, 18th Cong., 3d Reg. Sess. (2022).

204. An Act Creating the “Council for the Built Environment,” Appropriating Funds Therefor, and for Other Purposes, S.B. No. 2517, 18th Cong., 3d Reg. Sess. (2022).

205. An Act Creating the “Council for the Built Environment,” Appropriating Funds Therefor, and for Other Purposes, S.B. No. 1050, 19th Cong., 1st Reg. Sess. (2022).

206. *Id.*

207. *See* S.B. No. 2481, § 3 (a); S.B. No. 2517, § 3 (a); & S.B. No. 1050, § 3 (a).

208. *Id.*

Regrettably, the bills as lodged in Congress are silent as to the considerations for the environment.

V. THE BUILT ENVIRONMENT'S INTERNATIONAL BLUEPRINT: THE NEW URBAN AGENDA

We recognize that cities and human settlements face unprecedented threats from unsustainable consumption and production patterns, loss of biodiversity, pressure on ecosystems, pollution, natural and human-made disasters, and climate change and its related risks, undermining the efforts to end poverty in all its forms and dimensions and to achieve sustainable development. Given cities' demographic trends and their central role in the global economy, in the mitigation and adaptation efforts related to climate change, and in the use of resources and ecosystems, the way they are planned, financed, developed, built, governed[,] and managed has a direct impact on sustainability and resilience well beyond urban boundaries.²⁰⁹

— United Nations Conference on Housing and Sustainable Urban Development

In 2016, the UN Conference on Housing and Sustainable Development (Habitat III) adopted the “*New Urban Agenda*” in Quito, Ecuador on 20 October 2016.²¹⁰ It was endorsed by the UN General Assembly through Resolution 71/256 during the 68th plenary meeting of its 71st session,²¹¹ and was a product of the labor of “subnational and local governments, parliamentarians, civil society, indigenous peoples and local communities, the private sector, professionals and practitioners, the scientific and academic community, and other relevant stakeholders[.]”²¹²

The New Urban Agenda is revolutionary for it recognizes how the international community can reconsider the urban systems and physical form of urban spaces towards a better and more sustainable future where “all people have equal right[] and access to the benefits and opportunities that cities can offer[.]”²¹³ It is deemed as “a collective vision and political commitment” in promoting and realizing sustainable urban development, as well as “a historic opportunity to leverage the key role of cities and human settlements as drivers

209. *New Urban Agenda*, *supra* note 13, annex, ¶ 63.

210. *New Urban Agenda*, *supra* note 13.

211. *Id.* ¶ 2.

212. *Id.* annex, ¶ 1.

213. Joan Clos, *Foreword to UNITED NATIONS, NEW URBAN AGENDA*, at iv (2017) (The book source replicates merely the General Assembly Resolution attaching the Quito Declaration on Sustainable Cities and Human Settlements).

of sustainable development in an increasingly urbanized world.”²¹⁴ The Agenda includes both the Quito Declaration on Sustainable Cities and Human Settlements for All,²¹⁵ as well as the Quito Implementation Plan for the New Urban Agenda.²¹⁶

The *Quito Declaration* acknowledges how the present global struggle against climate change intermingles with other substantive issues such as poverty, inequalities, and spatial segregation, among others, noting that the persistence of these major obstacles to sustainable development are often an “irrefutable reality in cities and human settlements.”²¹⁷ As such, the New Urban Agenda furthers the possibility of utilizing urbanization as “an engine of sustained and inclusive economic growth, social and cultural development, and environmental protection,” potentially contributing to the “achievement of transformative and sustainable development.”²¹⁸

It envisages that cities and human settlements on the built environment will “fulfill their social function,” with a view of progressively realizing in full the right to adequate housing as corollary to the right to an adequate standard of living, without discrimination, universal and equal access to safe and affordable drinking water and sanitation, as well as public goods and quality services.²¹⁹ It likewise adopts and implements disaster risk reduction and management to reduce vulnerability, build resilience and responsiveness to natural and human-made hazards[,] and foster mitigation of and adaptation to climate change[,]”²²⁰ and envisions how the built environment may be used to “[p]rotect, conserve, restore[,] and promote [] ecosystems, water, natural habitats[,] and biodiversity, [and] minimize [the] environmental impact and change to sustainable consumption and production patterns.”²²¹

On the other hand, the *Quito Implementation Plan* enumerates the following transformative commitments: (1) sustainable urban development for social inclusion and ending poverty;²²² (2) sustainable and inclusive urban

214. *New Urban Agenda*, *supra* note 13, annex, ¶ 22.

215. *Id.* annex, ¶¶ 1–22.

216. *Id.* annex, ¶¶ 23–175.

217. *Id.* annex, ¶ 3.

218. *Id.* annex, ¶ 4.

219. *Id.* annex, ¶ 13 (a).

220. *New Urban Agenda*, *supra* note 13, annex, ¶ 13 (g).

221. *Id.* annex, ¶ 13 (h).

222. *Id.* annex, ¶¶ 25–42.

prosperity and opportunities for all;²²³ and (3) environmentally sustainable and resilient urban development.²²⁴ In the realization of these commitments, the New Urban Agenda calls on the national, subnational, and local levels to enable policy frameworks that integrate participatory planning and management of urban spatial development, and also complement international cooperation.²²⁵ Aside from the government, international and regional organizations and bodies such as those of the UN system are invited to “apply an integrated approach to sustainable urbanization, mainstreaming the implementation of the New Urban Agenda.”²²⁶

While the New Urban Agenda does not refer to the built environment per se, the transformative commitments it delineates for sustainable urban development can be understood to apply to the built environment even if not expressly stated. This is because built environment in the broad sense refers to the urban centers and even rural areas “planned and created by man provide the setting for all types of human activity[.]”²²⁷

A. Experiences from Select Countries and Regions

This Section highlights some of the experiences of other countries and regions in looking at the built environment, and how environmental and nature considerations have been incorporated within the concept.

1. United States of America

In the United States (U.S.), a built environment has been defined in its case law. According to *Klickitat Citizens v. Klickitat County*,²²⁸ a built environment is distinguished from the natural environment, with the former having as one of its element “historic and cultural preservation.”²²⁹ In one of their government websites, the U.S. EPA characterizes the built environment as that which

223. *Id.* annex, ¶¶ 43–62.

224. *Id.* annex, ¶¶ 63–80.

225. *Id.* annex, ¶ 81.

226. *New Urban Agenda*, *supra* note 13, ¶ 82.

227. Ainul Jaria Maidin, et al., *The Role of Law in Fostering Sustainability in the Built Environment Industry: The Malaysian Experience*, 6 AUSTL. J. BASIC & APPLIED SCIENCES 90, 90 (2012).

228. *Klickitat Citizens v. Klickitat County*, 860 P.2d 390 (Wash. 1993) (U.S.).

229. *Id.* at 403 (citing Washington Administrative Code [WASH. ADMIN. CODE], § 197-11-444 (2) (b) (vi) (1977) (U.S.) (as amended)).

touches all aspects of our lives, encompassing the buildings we live in, the distribution systems that provide us with water and electricity, and the roads, bridges, and transportation systems we use to get from place to place. It can generally be described as the man-made or modified structures that provide people with living, working, and recreational spaces. Creating all these spaces and systems requires enormous quantities of materials.²³⁰

The U.S. EPA expressly recognizes that the protection of the natural and the built environment goes hand in hand, and has published technical reviews relating to the interaction of both environments to land use, transportation, and environmental quality.²³¹ In their 2013 Technical Review, the U.S. EPA illustrated how the built environment directly affects the natural environment, be it in the aspect of development, transportation infrastructure, or building location and design.²³² They conclude that the built environment impacts the natural environment in the following aspects:

- (a) habitat and ecosystems;
- (b) water quality;
- (c) air quality;
- (d) global climate;
- (e) contamination and risk in communities; and
- (f) public health.²³³

2. Europe

The European Parliament similarly has their own characterization of what constitutes a built environment. In committing itself towards a sustainable built environment strategy, the Europeans define built environment as that

230. United States Environmental Protection Agency, Basic Information About the Built Environment, *available at* <https://www.epa.gov/smm/basic-information-about-built-environment> (last accessed Oct. 31, 2022) [<https://perma.cc/A2G5-6LMZ>].

231. MELISSA G. KRAMER, OUR BUILT AND NATURAL ENVIRONMENTS: A TECHNICAL REVIEW OF THE INTERACTIONS AMONG LAND USE, TRANSPORTATION, AND ENVIRONMENTAL QUALITY i-ii (2d ed. 2013) (This publication is sanctioned by the United States Environmental Protection Agency). *Id.*

232. *Id.* at i.

233. *Id.* at 118-19.

which corresponds to everything people live in and around, such as housing, transport infrastructure, services networks or public spaces, requires vast amounts of resources. It accounts for around half of all extracted material. In particular, the construction sector is responsible for over a third of the [E.U.'s] total waste generation.²³⁴

It is also important to note that the European Parliament likewise supported the Green Deal, the European Climate Law which endeavors to make Europe climate-neutral by 2050 and “attain the intermediate target of reducing net greenhouse gas emissions by at least 55% by 2030 (compared to 1990 levels).”²³⁵ One of the steps taken by the EU is the launching of the second edition of its New European Bauhaus program, an initiative which is designed to transform the region’s built environment into a more sustainable one with higher social value.²³⁶

Even private entities in Europe such as the European Insulation Manufacturers Association has conducted a study as to the possible 2030 and 2050 future of the European Built Environment.²³⁷ Among the goals envisioned by this report would be the establishment of buildings that are “entirely climate resilient” — meaning they are green and energy-neutral designed to withstand flooding and heat stress.²³⁸ Another would be smaller, flexible buildings which are adapted for changes in use on the short term while being constructed for the long term.²³⁹ These buildings are also anticipated to

234. European Parliament, Legislative Train 06.22, at 1 available at <https://www.europarl.europa.eu/legislative-train/carriage/strategy-for-a-sustainable-built-environment/report?sid=6001> (last accessed Oct. 31, 2022) [<https://perma.cc/VAR9-5XVG>].

235. European Parliament, European Green Deal, available at https://multimedia.europarl.europa.eu/en/package/european-green-deal_17506 (last accessed Oct. 31, 2022) [<https://perma.cc/Z3TX-FYTF>].

236. Andreea Cutieru, Steps Taken by EU in 2021 Towards a Sustainable Built Environment, available at <https://www.archdaily.com/975734/steps-taken-by-eu-in-2021-towards-a-sustainable-built-environment> (last accessed Oct. 31, 2022) [<https://perma.cc/NAD6-KT7R>].

237. David Thelen, et al., The Future of the European Built Environment: A Forward-Looking Description of Europe in 2030 and 2050 (Report by Arcadis Design and Consultancy & the European Insulation Manufacturers Association, 2019), available at https://www.eurima.org/uploads/files/modules/articles/1577094300_The-Future-of-The-European-Built-Environment-2019.pdf (last accessed Oct. 31, 2022) [<https://perma.cc/3RQL-BU2N>].

238. *Id.* at 5 (emphasis supplied).

239. *Id.*

be cognitive, which means that they are able to “autonomously manage internal climate (light, temperature, [and air],)” as well as efficiently adjust energy use by themselves.²⁴⁰

3. Asia

In Asia, Southeast Asia in particular, one study pointed out the possible ripple effect on the built environment front by 2030, considering that at least a hundred million more people are now expected to migrate to cities by 2030.²⁴¹ A lot of major cities in the region including Jakarta, Bangkok, Singapore, and Manila are particularly vulnerable to the adverse impacts of climate change as well as the looming rising sea levels.²⁴² Unfortunately, only less than half of the countries in the region have mandatory or voluntary building codes or certification programs in place.²⁴³

One of the promising solutions being proffered would be the decarbonization of the built environment in the region, or a built environment that is carbon built since this effectively lowers carbon formulation and embeds CO₂ in the curing process, effectively reducing concrete carbon footprint while maintaining the high-performance specifications required for safety, and using concrete as a long-term store of carbon.²⁴⁴ Other solutions would include the reduction of the extraction of natural resources and carbon-intensive manufacturing processes, the reusing and/or repurposing waste generated from our construction processes to achieve a closed-loop supply chain, and finally, the deliberate sequestering of carbon within the region’s built environments.²⁴⁵

VI. ELIMINATING BARRIERS TO ACCESS IN THE BUILT ENVIRONMENT

The lofty goals enunciated in the national laws and the transformative commitments in the international realm are met by challenges in their implementation. This Section looks at best practices from the Philippines, as

²⁴⁰. *Id.*

²⁴¹. Hello Tomorrow Asia Pacific, Sustainable Urbanisation: Decarbonising Southeast Asia’s Built Environment, *available at* <https://www.hello-tomorrow-apac.org/post/sustainable-urbanisation-decarbonising-southeast-asia-s-built-environment> (last accessed Oct. 31, 2022) [<https://perma.cc/8X3Q-U8C3>].

²⁴². *Id.*

²⁴³. *Id.*

²⁴⁴. *Id.*

²⁴⁵. *Id.*

well as barriers in implementing environmental laws which can be catalysts or hindrances in accessing the built environment as a force for nature.

A. Best Practices in Implementation

The findings from the UN Environment Programme (UNEP) which has compiled and documented the practices on the enforcement of environmental laws in varying jurisdictions reveal that the Philippines has the tools, equipment, and training for enhancing public engagement especially since it employs environmental profiling using Google Earth or other similar services in monitoring the impact of mining companies on the environment and in overseeing the landslide areas, quake prone areas, and the like.²⁴⁶

Furthermore, a multipartite monitoring team (MMT) is used pursuant to the PEISS and its IRR and Procedural Manual, with the goal of observing under close watch the environmental risks brought about by ECPs projects within environmentally critical areas (ECAs).²⁴⁷ The UNEP especially noted as good practice the requirement of installing closed circuit television (CCTV) for Treatment, Storage[,] and Disposal (TSD) facilities in order to observe the discharge of untreated hazardous wastes into the drainage system.²⁴⁸

Another practice commended by the UNEP is the Philippines' act of having clear timelines in its environmental laws and policies, commencing from the initiation of enforcement action up to the follow-up by environmental agencies.²⁴⁹ The report further added that there is a specified period of 10 months given for criminal cases and 12 months for civil and environmental cases, and that litigation involving climate cases can be heard in the Supreme Court if the environmental damage involves two or more cities or provinces.²⁵⁰

Together with Cambodia and Tanzania, it was noted that the enforcement officers in the Philippines are also equipped with enforcement checklists, mobile laboratories, and hand-held monitoring devices which are helpful in

246. CHINA ASEAN ENVIRONMENTAL COOPERATION CENTRE & UNITED NATIONS ENVIRONMENT PROGRAMME, ENFORCEMENT OF ENVIRONMENTAL LAW: GOOD PRACTICES FROM AFRICA, CENTRAL ASIA, ASEAN COUNTRIES AND CHINA 13 (2014).

247. *Id.* at 14.

248. *Id.*

249. *Id.*

250. *Id.* at 15 & RULES OF PROCEDURE FOR ENVIRONMENTAL CASES, A.M. No. 09-6-8-SC, rule 7, § 1 (Apr. 29, 2010).

effectively enforcing the country's environmental laws and policies.²⁵¹ However, it was pointed out that the crime report hotline in the country proved to “unsustainable,” as there were too many reports.²⁵²

With regard to awareness and public engagement, it was underscored that public consultation and hearings between stakeholders — the government, non-governmental organizations, public, and private sectors — are held before developments are allowed to proceed.²⁵³ The country was also lauded for having an environmental education initiatives.²⁵⁴ In fact, the Congress passed Republic Act No. 11393,²⁵⁵ otherwise known as the Advanced Energy and Green Building Technologies Curriculum Act, which aims to support the country's educational institutions in initiating and implementing curriculum development activities that will allow the

next wave of design and construction professionals, as well as the existing pool of architects, engineers, landscape engineers, landscape architects, and planners all over the country, to become adept in the incorporation of advanced energy and green building technologies in the design and construction of green or high[-]performance buildings.²⁵⁶

The other notable practices in the country which proved to be commendable to the UNEP are the training of technical officers to conduct confiscation and seizure operations,²⁵⁷ as well as the conduct of monthly online meetings on live televisions which allow the citizens to voice concerns over environmental issues.²⁵⁸ Contrastingly, the UNEP noted that as a good practice, the Green Courts in the country “need to be streamlined and supported, not simply introduced.”²⁵⁹ Related to this is the problem of fast-

251. *Id.* at 16.

252. CHINA ASEAN ENVIRONMENTAL COOPERATION CENTRE, *supra* note 246, at 18.

253. *Id.*

254. *Id.* at 19.

255. An Act Authorizing Higher Education Curriculum Development and Graduate Training in Advanced Energy and Green Building Technologies, and Appropriating Funds Therefor [Advanced Energy and Green Building Technologies Curriculum Act], Republic Act No. 11393 (2018).

256. *Id.* § 2.

257. CHINA ASEAN ENVIRONMENTAL COOPERATION CENTRE, *supra* note 246, at 21.

258. *Id.* at 24.

259. *Id.* at 30.

tracking of environmental cases,²⁶⁰ considering that in the Philippines, there are 117 environmental courts nationwide that handle an estimate of 1,000 cases each, with some dragging on for so many decades already.²⁶¹

It cannot also be gainsaid that aside from the efforts of the national government, the LGUs in the country also play a substantial role in mitigating the environmental risks on the built environment. Aside from the National Building Code discussed earlier, the development and implementation of local energy efficiency and conservation (EE&C) and green building programs and policies is also supported by the Energy Efficiency and Conservation Act (EE&C Act) or Republic Act No. 11285.²⁶² Under the said piece of legislation, LGUs are “identified to lead the implementation and monitoring of buildings and industries with the EE&C”²⁶³ as each LGU is required to establish an Energy Efficiency and Conservation Office (EECO) in their respective jurisdictions.²⁶⁴

In fact, the said law devotes a specific provision as to the role of LGUs —

Section 7. *Role of LGUs.* — The LGUs shall establish their respective EECOs headed by an EEC Officer as defined in Section 4 (1) and (m) of this Act. The LGUs through their respective EECOs and planning and development offices, with the assistance of the DOE and in coordination with the DILG, shall develop and implement their respective LEE CP and incorporate these in their local development plans.

Furthermore, the LGUs shall assist the DOE in monitoring compliance with the obligations of designated establishments under this Act for input in the NEECD.²⁶⁵

260. *Id.* at 32.

261. *Id.* at 30.

262. An Act Institutionalizing Energy Efficiency and Conservation, Enhancing the Efficient Use of Energy, and Granting Incentives to Energy Efficiency and Conservation Projects [Energy Efficiency and Conservation Act], Republic Act No. 11285 (2019).

263. ICLEI – Local Governments for Sustainability Southeast Asia & Philippine Green Building Council, Establishing Energy Efficiency and Conservation, and Green Building Policies and Programs for Local Governments (Policy Brief dated June 14, 2021), at 3, available at https://accelerate-ph.org/wp-content/uploads/2021/06/ACCELERATE-Policy-Brief_2021_EEC-and-GB-rev4.pdf (last accessed Oct. 31, 2022) [<https://perma.cc/5K2H-P856>].

264. Energy Efficiency and Conservation Act, § 4 (1).

265. *Id.* § 7.

B. Barriers and Challenges

The implementation of green building laws and policies on the built environment are, however, hindered by various challenges such as the scarcity of resources in addressing the competing development of LGUs,²⁶⁶ the limited manpower with technical capability in planning, implementing, and monitoring appropriate governmental interventions,²⁶⁷ and the little awareness of these environmental and building laws, regulations, and mandatory standards by the local governments, the private sectors, and the businesses.²⁶⁸

While most of the challenges mentioned pertain to the government, the Philippine society as a whole must concede that the burden of fostering sustainability in the built environment cannot solely be imposed on the government alone.²⁶⁹ By itself, the government “cannot be asked to shoulder the arduous task of planning, executing, administering, managing[,] and promoting sustainable built environment.”²⁷⁰ As such, there is also a need to reinforce the private sector’s responsibility in complying with the national and local policies, regulations, and mandatory standards.²⁷¹

VII. MAPPING OUR COMMON FUTURE BUILT FROM ROCK TO SHORE

At this juncture, it becomes evident that the built environment is a concept that is highly pertinent to environmental and climate considerations. This concluding Chapter first briefly discusses some insights and observations derived from the research conducted. This is followed by a set of

266. While national policies and directives that mandates resource allocation are in place, the actual downloading of funds is still subject to the availability of resources from the national coffers. Most often than not, other development issues and concerns are given priority than implementing the green building laws and regulations on the built environment. ICLEI-Local Governments for Sustainability Southeast Asia & Philippine Green Building Council, *supra* note 263, at 5.

267. Some LGUs simply lack the basic manpower and systems to implement new policies and programs relating to the built environment. *Id.* at 5-6.

268. Again, there is no dearth of legislation when it environmental laws which may apply to the built environment. Considering, however, the comprehensive collection of building and environmental laws need to be implemented, keeping the stakeholders properly informed remains to be a challenge. *Id.* at 6-7.

269. See Maidin, et al., *supra* note 227, at 95.

270. *Id.*

271. ICLEI-Local Governments for Sustainability Southeast Asia & Philippine Green Building Council, *supra* note 263, at 6.

recommendations on *how*, and most importantly, *why*, environmental and climate change considerations must be integrated into the built environment.

A. Analysis and Observations

1. A Limited but Critically Missed View of the Built Environment in the Philippine Context

What is clear from the discussions above is that the concept of the built environment is still missing in the legal and policy language of the Philippines. Although indirect references to the concept can be made and inferred — such as in the Green Building Code;²⁷² provisions of the PEISS,²⁷³ the E-NIPAS Act,²⁷⁴ and the Climate Change Act²⁷⁵ — no direct reference has yet been made. The research also shows several proposed measures which sought to bring the built environment within Philippine law and policy. Little appetite for its passage and very limited support, however, have been shown by our legislators and policymakers.

More importantly, even within the proposed definitions and incorporations of the built environment in pending bills and measures, the critical element of looking at the concept from the lens of the natural world, and considering environment and climate considerations, is missing. Some have used the term to manage professionals within this field, while others refer to it simply as what humans have built and constructed — an “artificial” world.

Here then lies the problem and the challenge when looking at the built environment from this narrow lens. As has been argued, the built environment is critical for two important reasons: *first*, the built environment represents the human impact on the environment, the representation of our anthropocentric view, and how human activity has for the most part negatively affected the natural environment, its ecosystems, and fragile biodiversity. *Second*, given the negative and increasing impacts of environmental degradation and climate change on human society and the natural world (due in large part to what was describe in the first point above), the built environment will be crucial in mitigation and adaptation efforts to these consequences. Therefore, a limited view of the built environment risks not only exacerbating existing conditions caused by the continued deterioration of the natural environment and the

272. See PHILIPPINE GREEN BUILDING CODE.

273. See Philippine Environmental Impact Statement System, *supra* note 118.

274. See Expanded National Integrated Protected Areas System Act of 2018.

275. See Climate Change Act of 2009.

escalating impacts of climate change but also the failure of efforts to address these challenges through human interventions.

2. Low-Hanging Fruits Exists for Easy Integration and Synergy

Despite the absence of the concept of the built environment within the current Philippine legal framework, there exists low-hanging fruits which can be used as catalysts for the integration of this concept in the country.

As discussed above, Philippine building, environment, and climate laws can be interpreted to support the concept of the built environment, with the critical understanding that it should include environmental and climate considerations. These laws can also be understood and seen as providing the necessary legal mandate to ensure that the built environment, as understood in the Philippine context, is not limited to merely the physical and human-made world but should also consider the natural world on which it is built.

B. Recommendations: The Built Environment for the Natural Environment

The built environment is a critical concept which needs to be mainstreamed into policy and decision-making processes. As emphasized, however, by this Article, this conceptualization needs to be one of *the built environment for the natural environment* — one that puts nature, ecology, biodiversity, and the health of people and planet at its core. The demands and challenges of environmental issues and climate change make this a non-negotiable, if the built environment around us, which sustains our lifestyles and the civilization built by humans, is to survive. Human beings need to be reminded that as a species they are connected to nature and rely on the natural environment for survival.

This Section briefly discusses some recommendations on how the built environment's policies and implementation in the Philippines can be made to better consider the natural environment.

1. Provide for a Legal Definition of the Built Environment Incorporating Environmental and Climate Considerations

The concept of the built environment, with the natural environment at its core, needs to be clearly articulated in State policies. This will serve as a clear indication to all policy and decision-makers, and to all stakeholders, that the Philippines intends to move beyond the traditional conception of the built environment by ensuring that it also considers the needs and challenges of nature. There is a need to move away — and perhaps expand — from the current understanding of the built environment that it only refers to human-made things and structures. Take for example the dictionary definition cited

at the beginning of this Article — the built environment is composed of man-made structures “rather than the parts that exist in nature”²⁷⁶ — which explicitly excludes the nature in the understanding of the concept.

One potential definition proposed by the Authors is that — “the built environment is comprised of any human-made structure which is constructed or built on the natural environment in such a way as to alter the existing or original state of nature, or that which affects the interaction and/or use of nature by other humans or living creatures.” This definition is important for several reasons. *First*, it recognizes that human-made structures are “built on” the natural environment. It is a clear recognition of nature being present in the natural environment. *Second*, the said human activity “alters” the existing or original state of nature. This point emphasizes that human activity impacts nature, whether in positive or negative ways. *Lastly*, it also acknowledges that human activity can influence and affect the use of nature by other humans and even by other living creatures.

With this legal definition, policies and programs which relate to the built environment can thus be formulated and conceptualized with environmental and climate considerations at its core. This process can also involve reconciling existing laws with such concept, in order to ensure alignment and avoid overlaps. The aim is to have synergy and cohesion with other development priorities and State policies, with the concept of the built environment for the natural environment as one of the guiding principles. Laws that may be considered and integrated include those on climate change and key environmental laws, including the Philippine’s Nationally Determined Contribution (NDC)²⁷⁷ in line with the Paris Agreement;²⁷⁸ building codes and construction; planning, zone, and spatial development plans and programs; environmental and other impact assessment and permitting processes; and infrastructure, transport, and other economic-driving activities, among many others.

One low-hanging fruit and immediate action on the above recommendations which policymakers can take is to make the Green Building

276. Cambridge Dictionary, *supra* note 22.

277. Republic of the Philippines, Nationally Determined Contribution Communicated to the UNFCCC, April 15, 2021, *available at* <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Philippines%20First/Philippines%20-%20NDC.pdf> (last accessed Oct. 31, 2022) [<https://perma.cc/X4R3-32GR>]

278. Paris Agreement to the United Nations Framework Convention on Climate Change, Dec. 12, 2015, T.I.A.S. No. 16-1104.

Code²⁷⁹ a mandatory requirement for all construction projects and activities in the country. As noted above, the Code itself will need updating and alignment with the proposed concept of the built environment for nature. This can be done through an amendatory law of the National Building Code and other related regulations. The updating of national plans and policies can then follow suit to ensure alignment with the Code and the newly-reconceptualized built environment.

2. Recognize the Critical Role of Cities for the Built Environment

Cities (and other LGUs as well) need to be at the forefront of efforts to mainstream the proposed conceptualization of the built environment for the natural environment. They are the front-liners of the government and thus have a better understanding of the local conditions and challenges, which need to be met and addressed. Among these myriads of issues are environmental degradation and the increasing impacts of climate change. No LGU is spared — from rural to urban, fifth to first class — the impacts will be widely felt, and all duty bearers will need to prepare.

Urban centers are to face a particularly unique challenge. With global projections pointing to two-thirds of the world's population living in urbanized areas by the middle of the century,²⁸⁰ cities will not only continue to be our centers of economy, culture, education, and society — they will more importantly be the centers for survival from the impacts of a deteriorating environment and climate change. Despite current best efforts at stemming this inevitable, cities need to prepare and be ready for the complex challenges which these issues will bring.

One way by which cities can prepare is through a reconceptualization of the built environment. Local governments are uniquely positioned to make crucial, on-the-ground decisions and changes when it comes to zoning and other local infrastructure. Designating safe zones and removing people from hazardous areas can be a start. Designing mitigation and adaptation infrastructure in consideration of nature can also be prioritized. For example, coastal cities with natural barriers like mangroves and wetlands can retain these areas as the first line of defense, and resources can be channeled to other critical infrastructures inland, or perhaps even to much-needed basic and social services such as health and disaster preparedness and climate change education.

279. PHILIPPINE GREEN BUILDING CODE.

280. See GENCER, *supra* note 16, at 10.

All these can be done through the long list of recognized powers which local governments have.

3. Ensure Participative, Inclusive, and Human Rights-Based Approach in “Rebuilding” the Concept of the Built Environment

Changing mindsets is a tall order and no easy task; yet, this must be done if humans are to survive and continue to thrive in the years and decades to come. As emphasized above, the survival of human civilization and the built environment depends on how human beings respond to environmental degradation and climate change in the next few years. As many have said, it is “make-or-break time,”²⁸¹ or the “11th hour,”²⁸² — which means that time is running out.

For millions of people around the world, especially in developing countries like the Philippines, however, thinking of environmental issues and climate change is a luxury. For them, survival means determining when the next meal will be, identifying where clean water can be accessed, or finding the kind of shelter they can use to fend off the elements. Critically, the lack of action and inaction on environment and climate issues aggravates and exacerbates the state of vulnerability and marginalization of these people. Thus, it is important that in rebuilding the concept of the built environment, a human-rights based approach that is participative and inclusive needs to be at the center.

This approach will help prioritize the vulnerable and marginalized in society, who have the most to lose and gain from inaction or action,

281. See World Meteorological Organization, 2021 is “Make Or Break Year” for Climate Action, available at <https://public.wmo.int/en/media/news/2021-%E2%80%9Cmake-or-break-year%E2%80%9D-climate-action> (last accessed Oct. 31, 2022) [<https://perma.cc/PXB2-YJH2>]; Olivia Rosane, *This is the Make-Or-Break Decade for Climate Action, IPCC Declares*, ECOWATCH, Mar. 23, 2023, available at <https://www.ecowatch.com/climate-action-global-warming-ipcc-forecast.html> (last accessed Oct. 31, 2022) [<https://perma.cc/RR6Y-JBLU>]; & The Nature Conservancy, *Nature’s Make Or Break Potential for Climate Change*, available at <https://www.nature.org/en-us/what-we-do/our-insights/perspectives/natures-make-or-break-potential-for-climate-change> (last accessed Oct. 31, 2022) [<https://perma.cc/89JU-V9C3>].

282. See Climate Reality Project Philippines, *Eleventh Hour: Managing Our Climate Change Fears*, MANILA BULL., Feb. 23, 2023, available at <https://mb.com.ph/2023/02/23/eleventh-hour-managing-our-climate-change-fears> (last accessed Oct. 31, 2022) [<https://perma.cc/T83N-XHRV>] & THE 11TH HOUR (Appian Way Productions, et al. 2007).

respectively. For example, communities within danger zones can be prioritized for relocation into stronger, sturdier homes with access to basic services. Their displacement must also consider the provision of new jobs and alternative sources of livelihood. Placing these people out of harm's way opens many opportunities for education, respect for the rights of women, girls, and children, and considerations for the elderly and differently-abled. All these benefits are because there was action triggered by considering the built environment for the natural environment.

An inclusive and participatory approach will also be critical in gathering support from the private sector, particularly those in the building and construction industry, including those involved in design and architecture. They are all critical players if the reconceptualization and rebuilding of the built environment is to be a success. These stakeholders will also be critical in ensuring the effective and efficient implementation of any new policies and programs enacted under this new concept.

VIII. CONCLUSION

This Article takes us on a journey from rock to shore, transitioning from the natural world to the built environment that surrounds us all. It is crucial to remember that before the emergence of the man-made world, nature had already subsisted. People must acknowledge the fact that human beings are but a small part of nature, and that survival is impossible without affording it ample protection from the advances of humanity. Humans cannot build their way to survival without considering the natural environment. Environmental degradation and climate change should serve as wake-up calls, urging people to start rebuilding the world alongside nature — humanity's very survival demands no less.