OXFORD JOURNAL
OF STUDENT
SCHOLARSHIP

Taming Brutalism: The Rise of Eco-Brutalism

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ABSTRACT

This paper undertakes research on the psychological effects brutalism can bring and how one can shapeshift it into a world of a calmer and fascinating perspective with eco-brutalism as an alternative. It dives into the history of brutalism which focuses on the way it came to be as well as historical buildings with their prosperous architects. Then, it lectures about the major problems of brutalism, focusing on the thoughts against it, and how it psychologically changes how one views that style, incorporating data from a survey that showcases how people really feel about it, providing an interesting retrospective on how other people view brutalist buildings in a similar manner. Next, it diverges into an alternative called eco-brutalism; it focuses on what it is and what benefits it has versus brutalism, highlighting an important reformation that makes it more appealing. Lastly, this research paper presents the author's own design on eco-brutalism that was divulged based on research and survey, showcasing their own model process and explanation of it, hoping for it to be mastered in the future.

Keywords: *Architecture, Sustainability, Eco-Brutalism, Biophilic Design, Aesthetic Perception, Concrete*

INTRODUCTION

Brutalism has always fascinated me, as it can look unappealing at times, but upon closer examination, it evokes a sense of nostalgia and interest. The style of Brutalism became popular in the 1950s-1970s, when architects manipulated materials to produce abstract yet compelling concrete frames, showcasing simplicity with complexity, innovation, and expression, and serving as a precursor to later modern architecture. Brutalism utilizes raw materials such as concrete, steel, stone, rough brick, and glass, featuring their structural strength and texture. However, it is often described as a cold or depressing style, psychologically affecting how they view the style and connecting it back to disheartening memories. However, with the correct use of materials and design enlisted in creating an impactful design of brutalism, it could be shapeshifted into a habitat of fascination and hope through eco-brutalism; a new and advanced alternative that not only benefits the view, but also one's demeanor physically and mentally.

LITERATURE REVIEW

History of Brutalism

Brutalist Architecture sprouted after World War 2, primarily becoming popular in the 1950s to mid 1970s. After that, there was a rapid decline of brutalist buildings, although the style had spread across the world and shaped the everyday surroundings of millions of people. The term 'brutalism' originates from the French phrase "beton-brut," which means raw concrete, established by the father of brutalism Le Corbusier. This is because it revolves around concrete, providing a strong structural foundation with some usage of decorative motifs that capture more essence in the style. Although the most notable materials used are concrete or brick, there are also instances of using steel, gabions, timber, and glass, creating a more conceptual and philosophical look. A guiding idea of brutalism is the honest expression of structure and materials: rather than covering a building's structural "skeleton", Brutalist architects often left it exposed. Brutalism is often linked to socialist and welfare-state ideals, and some architects regarded its plain, unornamented materials as a way of reducing class distinctions, in contrast to the ornament associated with wealthier clients. However, Brutalist buildings emerged in very different political and institutional contexts, including welfare-state housing in Great Britain, universities and government buildings in North America, and most notably, the state projects in the Soviet bloc, so the style cannot be reduced to a single ideology. It is more accurate to distinguish the material and formal characteristics of brutalism from the political associations of buildings. Those associations, together with the austere appearance of many examples, help elucidate why the style has often been perceived as melancholic and did not gain wider popularity.

Brutalist Architects and Their Buildings

Many prosperous architects have established a solid boundary by creating brutalist constructions that showcase strength, harshness, and coldness with a touch of their own creativity and thoughts. Swiss Architect Le Corbusier is often credited as a key forerunner of brutalism, as he designed the well-known *Unite d'habitation* of the south of Marseille in 1945. Serving as an architectural experiment, Le Corbusier tried to design the apartment while also preserving the surrounding nature. After countless design proposals, the final version of *Unite d'habitation of Marseille* was adopted in March 1947, bringing together 330 housing units between the hill and the sea. Another key brutalist architect who created true European brutalist architecture is Ernö Goldfinger, a Hungarian British architect. The most notable building he created was the *Balfron Tower*, in Tower Hamlets, London. Built between 1965 and 1967, Balfron Tower is a 26-storey block in brutalist style, hosting 136 flats and 10 maisonettes. It was designed to re-house individuals who lived in poor communities or damaged areas from wars.



Figure 1: "Unite d'Habitation Berlin" by Ikkoskinen, Wikimedia Commons, licensed under CC BY 2.0



Figure 2: "Balfron Tower" by Graeme MaClean, Wikimedia Commons, licensed under CC BY 2.0

Though there are more architects who mastered brutalism, one key figure who designed solid brutalism yet with a touch of modernism is Arthur Tarkhanyan, an Armenian architect, being the author of city plans for Abovyan street, Lake Sevan, as well as for Erebuni: mastered in the city of Yerevan, Armenia. He was known for building *Zvartnots Airport*; however, Terminal One of the airport was unfortunately abandoned in 2011, yet it showed the most brutalist features. Arthur Tarkhanyan, along with Hrach Poghosyan and Spartak Khachikyan, collaborated to design the *Youth Palace*, also known as *kukuruznik* – meaning corn – in Armenian. It didn't have the typical Soviet Modernism or Brutalist view; at first, it looked strange. However, it holds immense significance of creativity and reformation, with the top of the building being a restaurant where it rotated, allowing individuals to enjoy a calm 360 degree of Yerevan. It also served as a hotel, night club, and a registrar for civil marriages in the *Chamber of Solemn Registration of Marriage*, which was built beside the building attached to it. Unfortunately, the complex was destroyed when the foundation was sold to Eduard Avestiyan, the head of Avangard Motors LLC in 2006, stating it was poorly built and would collapse if an earthquake were to occur. Until this day, individuals who have seen or entered the complex reminisce about the building and its prosperity in architecture – remaining as a ghost – but never forgotten.



Figure 3: "Old Terminal of Zvartnots Airport" by Matvey Andreyev, Wikimedia Commons, licensed under CC BY 3.0



Figure 4: "Youth Palace" in Armenia, Hayk Rachidian 2004

Brutalism itself originally started to resolve issues such as the decrease in housing because of bombings and the diaspora of war effects, building developments to provide refuge to civilians who were affected by the devastation of war. It was a starting point for fixing living conditions on Earth, and it did work out; however, its reputation declined during the 1970s. Critics described large concrete buildings as ugly or oppressive, and as more complex architectural styles, like postmodernism and deconstructivism, became more popular, Brutalism was increasingly overlooked. Some critics have also linked Brutalist estates to poor maintenance, neglect, and social isolation, so negative reactions are not purely visual but also memorable.

METHODOLOGY

Research Approach

The study combined a small quantitative survey with qualitative short-answer responses to explore how anonymous students describe their reactions to Brutalist architecture and whether they are open to changing the idea. The Google Forms survey was completed by 51 students from a single school, who were recruited by placing the survey on the school platform to gain attention. I also asked around the cafeteria if they were interested in filling out the form, to which they answered yes. The form held 3 Yes or No questions responding to the design and opinion of whether it should be reformed, and one-short answer question focusing on one's opinions on how they are provoked when seeing a typical Brutalist building: Block Tigran. It took 5 days to gain substantial respondents, and once completed, I examined the open-ended responses and created charts to replicate the data. Though the respondents were limited and were in one school instead of a larger pool, it is evident that majority of the respondents dislike brutalism as a whole and would prefer a cohesive and contextual design instead. Based on the question

whether respondents would prefer a reconstructive change on brutalism, I decided to build my own model from scratch, using foam and plenty of biophilic elements to articulate the encapsulation and main point of eco-brutalism; a reformed replacement of Brutalism, that could evoke more benevolent opinions from respondents.

Perceptions of Brutalism: Survey Findings

Brutalism provokes a remembrance of childhood memories for many who lived during the 1950s to 1970s and beyond. They grew up in and out of those harsh, brutalist buildings, specifically noticed in the Soviet Union, where many of the post-Soviet buildings are brutalist architecture. Though it was meant for a compelling cause, it ironically functioned in reverse as to what it was supposed to substantially be: a sanctuary for civilians who were affected by poverty, bombings, and war. However, commentators intend that the direct cause of hatred is not only from the buildings' appearance but also their affiliations of totalitarian regimes which evoke a sense of cold-hearted emotions, thus hindering their perception of Brutalism. I created a survey, answered by 51 students in George C. Marshall High School, which asked questions about how they perceive the style of brutalism. When asked if they find brutalism appealing, 70.6% said that they don't, while 29.4% said they do (Figure 5). A short response asked the question of what feelings are provoked when seeing brutalism, and the majority said sadness, disturbance, and poverty. When asked if they would live in a brutalist apartment, 70.6% said no, while 29.4% said yes (Figure 6). Lastly, when asked if they would reform brutalism in a different way, such as eco-brutalism, 78.4% out of the 51 students said that they would reform it (Figure 7). These results show that most respondents in this sample reported finding Brutalism unappealing and said they would not live in a Brutalist apartment, meaning they are intentionally open to reformation of the style as it tends to be associated with negative implications. Because Brutalism tends to be dwarfed and repetitive, it increases cognitive fatigue because of the overwhelming emotions one may feel when looking at the endless rows of windows. It is also evident that the absence of warm details and gradual spatial progression prevents individuals from finding the style welcoming. Therefore, most respondents consent to the possibility of reformation.

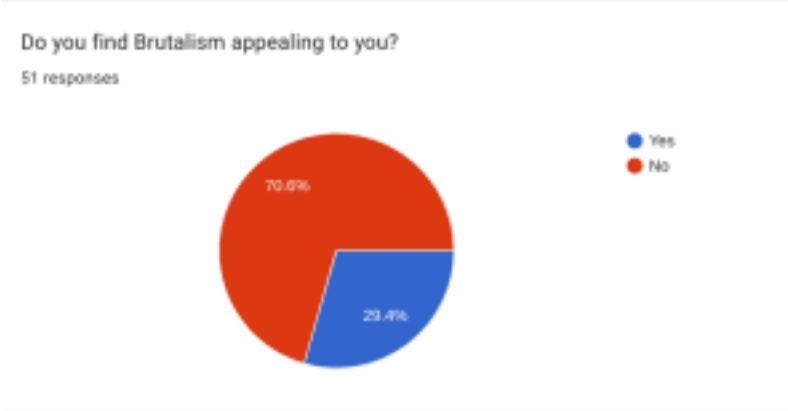


Figure 5: Survey responses to whether Brutalism is appealing (n = 51).



Figure 6: Survey responses to whether respondents would live in a Brutalist apartment (n = 51).

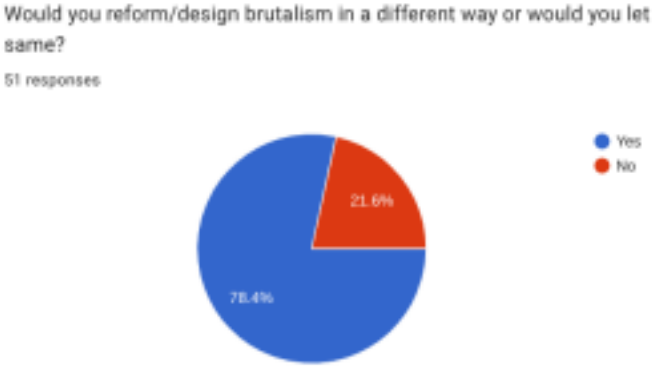


Figure 7: Survey responses to whether respondents would reform Brutalism, such as through eco brutalism (n = 51).

Improved Brutalism: Eco-Brutalism

Eco-brutalism is a new subject that explores the fundamental aspects of including brutalism with nature, serving as a relatively improved and friendly alternative to the original. In the survey, 78.4% prefer the idea of refining brutalism. This motivates the approach since although the survey didn't explicitly mention reformation from Brutalism to Eco-Brutalism, it derives substantially from the respondents' answers. It not only incorporates the aspect of solid structure and function of the building, but it also includes urban planning that surrounds the building itself, making an intriguing combination of nature and concrete.

Biophilic design is based on the idea that people have an affinity for nature. Research suggests that exposure to natural settings can support stress recovery and restore attention, which is the basis for the expectation that planting on a building could make it calmer, welcoming, and more enticing to look at. Essential techniques for mastering the landscape of an eco-building include vegetation that provides

sustainability: trees provide shade, green walls function as natural insulators that create more oxygen, and lower consumption of energy for cooling and heating. Architects also make sure to incorporate sustainable materials that tie in with the improvement of the environment, including reclaimed wood, recycled materials, and low-carbon concrete. Though adding greenery does not by itself make a building environmentally sustainable, all these merged incorporations that develop the thesis for eco-structures provide a resolution of all the damage done to the environment and act as a modern alternative that can be successful.

Examples that provide exceptional structures of eco-brutalism include *Bosco Verticale*, in Milan, Italy, where the vegetation on the balconies absorb Carbon Dioxide to provide natural insulation. Its architect, Stefano Boeri, has since adapted the concept in other cities, including the Vertical Forest in Tirana, Albania, whose façades hold 145 trees and more than 3,200 shrubs and bushes (Figure 8). Another remarkable building is in Amsterdam, the Netherlands, called Valley (Figure 9). It incorporates three connecting towers with planted terraces; a frequent example of vegetation incorporated into dense urban architecture. In other words, the incorporation of biophilic design is vital to appearance, sustainability, and relationship with humans and the environment. It not only benefits the environment through energy efficiency and improved health but also helps with better mental health and stress reduction; direct integration of nature into living spaces helps decrease anxiety as it decreases cognitive overload, thus having a major benefit to the architectural premise of success.



Figure 8: "Vertical Forest Tirana" by BBB2021, Wikimedia Commons, licensed under CC BY-SA 4.0



Figure 9: "2022 Valley, Amsterdam-Zuidas" by Ceescamel, Wikimedia Commons, licensed under CC BY-SA 4.0

Concept Goal

The goal of this project is to explore an eco-brutalist building that invites people to explore and be in touch with nature; not just with raw, exposed concrete. My design intention is for the exposed concrete to be paired with vegetation so that the structure feels softer and more inviting, and so that the exposure of its structure reads as honest rather than harsh. The habitat surrounding the building plays a larger role than one might expect: if a design is not inviting, people may be less willing to approach it, which is a criticism often made of Brutalist architecture. Therefore, the design aims to pair the sharp, raw concrete of the structure with organic softness in hopes to create a serene environment that fills a person's heart with hope and fascination of what the world will become.

Development and Discussion of Design

For my design, called "The Biobeton", I first drew the model that I was planning to make. I made sure to incorporate biophilic elements, windows that were relevant in the style, and hard edges that elucidate the element of brutalist architecture. The preservation of Brutalism is intentionally made to repel whole negativity surrounding the style and to capture the fact that one can reform Brutalism into a more modern and environmental approach, eco-brutalism; similar style, but different function. A building tends to be very alluring when it has sharp, exposed edges if it is manipulated accurately; the manipulation of biophilic elements and sharpness elucidate the move of curiosity and modernity. To capture the sharp edges, I used foam to capture the hard edges with an X-acto knife and a cutting board. I made sure that the foam was measured accurately, relying on 2 x 2-inch squares to capture the technical aspect of the process and for it to be proportional thoroughly. I made two towers, so it blends into the environment of nature and for it to have a proportional perspective. The involvement of two instead of one tower is voluntarily made to encapsulate the needed dynamic in a vast environment. Having only one tower contributes to the vastness of space; it does not create a dialogue between the atmosphere and the people, and it doesn't capture the natural light needed. Therefore, the creation of two towers was to establish a clear setting that contributes to a more natural aspect of design, involving the natural fill of light and more structural benefits for vertical greenery, thus only making the design more earnest. One of my main aspects that must be included to fulfill the theme of Eco-Brutalism are the surroundings of nature;

therefore, I used materials of green powder to resemble grass, bushes, miniature trees, and torn pieces of plastic plants to capture the different utilizations of nature. The vegetation isn't only used to capture beauty, but also sustainability that increases shading which directly lowers temperature, increases better respiration, and acts as a calm mechanism to lower cortisol. Lastly, I measured and cut pieces of light gray construction paper to put over the base. Light gray was an essential element because it serves as a neutral mix between the building itself and the base, but the base also leads to the concentration of the building which encapsulates the design. Though maintenance of the vegetation would be difficult since there would need to be the ability to constantly trim and manage plant health as well as higher cost on obtaining biophilic elements and making the structure viable for the plants to survive on with additional implications like high-end root barriers, the overall effect of eco brutalism significantly reduces energy costs for air conditioning, lowers temperature of entire city blocks, and acts as a literal lung for polluted areas and for people alike. Although eco-brutalism plays a substantial role in maintenance and cost complications, the developed intention surrounding the idea acts as a rescue to the needed maintenance to come; it benefits the humans, the environment, and even future costs that directly acknowledge further advancements of architecture.



Figure 10: Model Design Drawing, Natalie Rachidian 2026



Figure 11: Process, Natalie Rachidian 2026



Figure 12: Addition of Biophilic Elements, Natalie Rachidian 2026



Figure 13: Front View, Natalie Rachidian 2026





Figure 14: Above View, Natalie Rachidian 2026 **Figure 15:** Back View, Natalie Rachidian 2026

CONCLUSION

Brutalism is often described as a cold or depressing style, and the students surveyed largely reported finding it unappealing; however, with the correct use of materials and design, one could shapeshift brutalism into a structure of fascination and hope specifically through a new and improved alternative called eco brutalism; this style not only benefits the appearance, but also the response from the surroundings as it is intentionally integrated to fix the absence of light and positivity.

Brutalism is also a deep and interesting style that expresses vulnerability and sanctuary, and how it is viewed is shaped by the setting of the buildings, their appearance, and the period when it became popular. Throughout this research, I was able to explore my favorite architectural style and find out why people dislike it, surveying students and asking for opinions on brutalist architecture along with additional research from a variety of sources. Constructing the model from my drawing taught me how technical architecture is, and it made me appreciate the intricate and intentional details that shape how the world is. Hopefully, this journey of impeccable research captivates many, and informs the audience about how one can shapeshift brutalism into eco-brutalism for a better and healthier life.

ABOUT THE AUTHOR

Natalie Rachidian is an 11th-grade student at George C. Marshall High School. She is interested in architecture, particularly Brutalism and sustainable, biophilic design.

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