Yes Really Is More: The Ethical Case for Minimalism in Design

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How much does your house weigh? An odd question, perhaps, but not an absurd one. This strange phrase was coined by the famed designer, environmentalist, and futurist Buckminster Fuller [1]. It was not just a silly phrase made to poke fun at ignorant architects, but rather, it was an attempt to truly question the essence of design, and make designers think about the deeper meaning of their work. Designers and engineers are often expected to create complex designs, with the idea that more complex designs must be better. However, just as Fuller did nearly a century ago, the designers of today should question that assumption. That idea of questioning assumptions, and of considering what is essential in design, is the basis of minimalism.

Although minimalism is often considered simply an aesthetic preference or a personal style, it needs to be understood as more than that. What critics of minimalism often misunderstand is that minimalism is at its core driven by ethical considerations. Designers who endorse minimalism do not, and should not, do so as a matter of taste, but rather as a matter of ethics. Minimalism rejects the notion that complexity is the only solution to complex problems. Instead minimalism compels designers to consider the ethical cost of excessive complexity and consider how they may achieve more with less, not just in terms of visual design, but in terms of ethics.

It may seem unusual to view minimalism as an ethical responsibility. After all, the public perception of minimalism as a visual style, appreciated merely for its pleasing visual qualities. Admirers of minimalism often express appreciation for clean compositions and an overall simplicity and lack of clutter. Critics decry it as superficial and uninteresting. Minimalists designs are described as “sleek, simple devices” that “rely on a hidden maximalist assemblage”, and as “aestheticized emptiness” [15]. Many believe it is only a trend promoted by social media, trading “the orthodoxy of consumerism for the orthodoxy of tidiness” [2]. Yet all these viewpoints miss the ethical rationale behind minimalism.

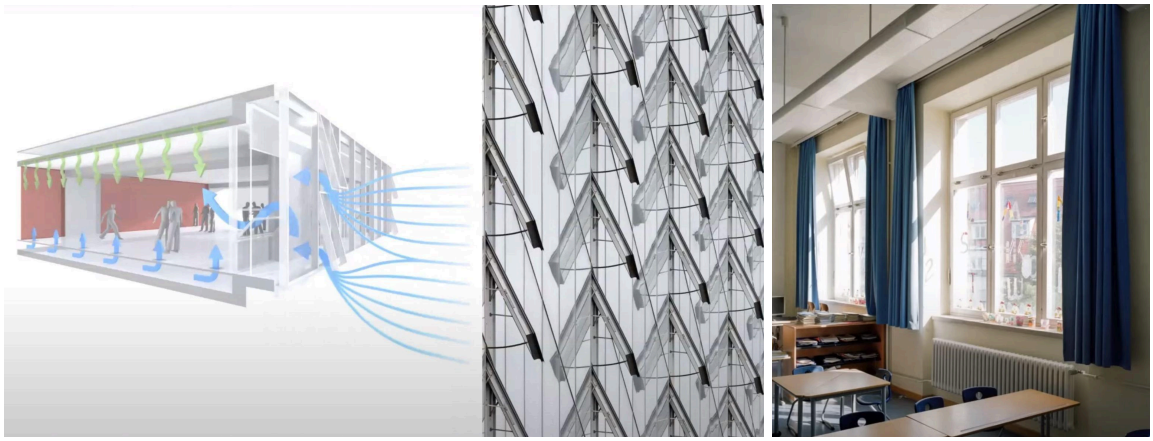
Conventional Minimalism Imagery (Villa Savoye [3], Eames Chair [4], Donald Judd Artwork [5])

In order to understand the ethics of minimalism it is first necessary to clarify what minimalism is. Minimalism is not the same as simplicity, and that distinction is important. Simplicity refers to

those things which are easy to understand or to do; it is the absence of complexity. Minimalism is the process of stripping things down to their most essential qualities, of eliminating any superfluous elements while preserving only those which provide genuine value or fulfilment [6]. Thus, a complex design may be simplified down to its most essential elements and be both *complex* and *minimal*. And much the same, minimalism can reveal complexity in some aspects of a design in order to reveal the minimal essence in others. Consider, for example, the modern smartphone. It would be ridiculous to say a smartphone is simple, but they are often described as minimalist. This is because designers made the choice to present to the user only that which is essential to them: a touchscreen. The result is a device that is easier to use, thinner, lighter, more durable, and more versatile. By minimizing, designers were able to increase functionality in a much greater proportion than they did complexity.

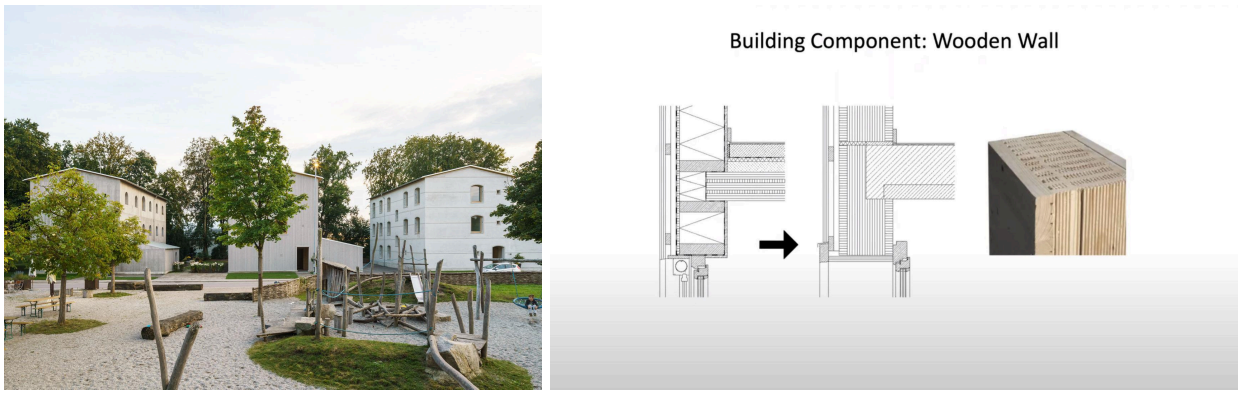
Minimalism is not the absence of elements in a design, but the process of critically examining the value of those elements, and eliminating those deemed inadequate. As such, minimalist design is skeptical of, but open to, seemingly ornamental features, so long as they provide value, whether it be fulfilling a functional purpose, or as a cultural or psychological signifier. And furthermore, minimalism is not the absolute pursuit of eliminating anything deemed unnecessary, but is in relative to the design criteria. A feature may be unnecessary in one design but absolutely essential in another. Consider the increasing prevalence of touch screens as replacements for historically tactile buttons in products. As mentioned, this could be immensely useful in a multipurpose device such as a smartphone, but perhaps not so much for a simple single-function dial, as often derided in cars [16]. Here we have to weigh factors such as safety, cohesiveness of a whole product line, and cultural context. The criteria for determining what to preserve or erase to achieve the best design are ultimately up to the designer.

Perhaps the most important topic in which minimalism can be considered ethically is sustainability. This is particularly evident in the construction industry. Designers often try to meet sustainability performance expectations with exceedingly complex designs, such as sophisticated ventilation systems, responsive climate control, and complex facade assemblies [7]. Yet research suggests these systems are not successful [7] [8]. An example of this comes from a report by the Royal Institute of British Architects (RIBA), which claims “only 5% of the 59,967 school buildings studied classed as performing as intended and operating efficiently” [8]. As further evidence, at a lecture at the USC School of Architecture, professor of Building Technology at TU Munich, Thomas Auer, presented the audience with two contrasting case studies: the first, a glass and steel building that saves energy by using sophisticated mechanical systems that adapt to variable climate conditions, and the second, a simple school building from 1898 [7]. Impressively, the over one-hundred-year-old building achieved comparable comfort to contemporary buildings solely through simple design gestures: tall ceilings and thick walls [7].



Captures from Thomas Auer lecture at USC [8] contrasting complex and simple environmental design solutions of comparable effectiveness.

Additionally, there are the material, energy and labor savings from construction itself. As Munich's Build Simply program claims, "The complexity of constructions and building technology has been increasing steadily for decades. This applies to the requirements for stability, heat, moisture, fire and noise protection, hygiene and health as well as general user comfort." This means using more natural resources, relying more on fragile supply chains, and requiring more and higher-skilled labor [9]. All this implies significant energy and resource consumption. When considering the subpar performance of these complex designs [8] [9], simplification in building design becomes a matter of environmental responsibility. As such, many architectural enterprises are now prototyping simpler construction methods [9]. An example is a project in Germany prototyping simplified variants of three primary construction materials: timber, brick and concrete [9] (Shown in image).



"Building Simply" Prototype Construction [9]. A simplified wall section contrasted with mainstream practice [7]

With this in mind, minimalism takes on a utilitarian purpose. After all, minimalism consists of critically assessing what resources are truly necessary to achieve a particular design goal, and eliminating those that are not [6]. A design guided by minimalism is one which achieves the same objectives as a more complex design whilst expending fewer resources [6]. In a utilitarian sense, the minimal design should be the optimal design, as it maximizes the welfare that it can

produce, while minimizing the potential welfare costs. The simple reason being that resources are used on a design that could be just as effective without them, rather than being saved for something more fruitful. Saving these resources, in theory, allows them to instead be used by others. To make designs needlessly complex stands to potentially deprive the less fortunate of resources they could have otherwise had.

Laborers also benefit from this ethically driven design philosophy. What sets designers apart from artists and artisans is that designers are entrusted with delegating the production of their design to others. As such, designers have a duty to those who make their designs a reality. Particularly, it is worth considering whether it is fair for people who have little say in the design to expend their labor doing work of little significance. Architect Adolf Loos argued as far back as 1929 that the labor used in the production of ornament in architecture is wasted as said ornament inevitably falls out of style, which naturally comes at the expense of those producing such ornament [10]. This assertion can be applied to any superfluous design features. The designer can make an effort in their design so that laborers are not required to do work of little significance. And even if a minimalist design does not save labor, there may be greater fulfillment in work that is done with purpose and significance, rather than for the sake of unnecessary details.

Time and labor savings from minimalist design can also be considered a matter of *common good*. This is particularly exemplified by the current housing affordability crisis, which is in part exacerbated by shortages in skilled construction and environmental issues. As the president of the Home Builders Institute puts it, "The home building industry faces a major shortage of skilled workers, this persistent challenge endangers the affordability and availability of housing and hinders a robust economic recovery." [17] If minimalism can help save time and labor by transferring the required labor and time to the exercise of design itself, rather than to production, some of these concerns may be mitigated. As an example, SpaceX is currently employing a minimalist design and manufacturing strategy in order to accelerate their production of the first fully reusable orbital rocket, by removing non-essential features and simplifying necessary elements [11].

As part of the designer's responsibilities, one must consider the community which their design is serving. Understanding that many of the users of a design may be differently-abled, it is a matter of ethical responsibility and fairness to consider those users who may be overwhelmed by sensory overstimulation brought about by complex design. Some users, particularly those with neurodevelopmental disorders or sensory impairments, require clearer, cleaner environments. A designer should understand that what may be a matter of taste to some can be a psychological or physiological hurdle to others. This is why simplicity is encoded as Principle #3 of the NCSU Center for Universal Design's Universal Design Principles, which states that a design should be "easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level" and that a designer should "eliminate unnecessary complexity." [12]

A designer should also consider the role of risk and uncertainty in design, whether in terms of safety, or environmental and social concerns. As Dr. C. Christensen argues

> "technology which is built around the idea of total control is built around a fundamentally mistaken idea. For such technology presupposes that we can absolutely anticipate ... how systems and components of systems will behave. That it is not in fact possible to anticipate the future behavior of systems in any absolute sense is shown by the fact that the more powerful and the more complex technology becomes, the more the experts tend to disagree about how such technology will behave". [18]

and demonstrates how this disagreement emerges from complexity by pointing out how in the Space Shuttle Challenger disaster "several quite contingent and otherwise unrelated events were able to combine to initiate a chain of cause and effect which culminated in the tragedy" [18]. In other words, complexity both creates risk and makes it more difficult to assess risk. Additionally, due to safety precautions, the Space Shuttle needed to go through a much more rigorous refurbishment process than initially expected. Indeed, the shuttle was so difficult to refurbish that it completely negated any of the benefits of its reusability [13]. Thus, C. Christensen argues that designers "should regard simplicity and loose-interconnectedness as central criteria governing our design" [18]. It's the same story with Boeing's 737 Max disaster. Larger teams dilute individual responsibility. Managers, engineers, and fabricators all point fingers at each other, and issues get lost in between the layers of management. Issues were not caught because they were hidden behind layers of complexity. The primary source of problems, MCAS, emerged as a result of attempting to retrofit an existing design, ie, adding complexity, rather than starting from scratch, to save on development costs. Regulatory bodies failed to catch problems because reviewing such complex systems takes immense resources. Complexity obfuscates problems. This is not an issue reserved to the aerospace industry. Think about how difficult it is to diagnose a problem in your car, to the point laymen depend on professionals for the most basic observations. Complexity makes it more difficult to source ethically, to evaluate the life cycle of products, to identify issues within them, and to figure out who can and how they can solve them.

That is not to say that minimalism is the be-all and end-all of good design. Rather, designers should think more critically about the ethical role of minimalism. On the one hand, designers hesitant or critical of minimalism as a style should consider the ethical premise of minimalism and adopt it, not as a universal rule, but as one among many guidelines in their practice. On the other hand, designers that appreciate minimalism as a style should think more deeply and critically about minimalism as an ethical practice, and make an effort to align their work with these ethical considerations, rather than merely with a stylistic preference. Minimalism should be understood as a way to approach design that considers and examines what is valuable design, not just in terms of visuals, but in terms of ethical responsibility. In that way, minimalism can be one of the designer's tools in the production of ethical and responsible design.

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