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Form, Function, Failure

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Does form still follow function? In 2009, design critic Alice Rawsthorn declared the demise of the famous phrase once coined by architect Louis Sullivan.¹ Citing the example of the iPod Shuffle she wrote, “How could you be expected to guess what that tiny metal box does by looking at it? There are no clues to suggest that it might play music. The appearance of most digital products bears no relation to what they do.”²

This may be true for digital devices. With technology rapidly taking over human existence, designers have limited choices when it comes to the shape, material, and finish of the machine. Instead, creators focus on the interface, or the “face,” users interact with and give commands to.

However, in this highly manufactured world, humans still depend on a large number of non-digital objects. These everyday things are so mundane in their purpose that we hardly ever notice them. Be it a fork, a paperclip, or a frying pan,

their form follows function. The Japanese brand Muji, known for its functional and aesthetic products, recognizes the essence of design in objects that are simple. In the brand book *MUJI*, Kenya Hara writes that objects “that may at first appear monotonous” are indeed a collection of “calmly determined design choices,” containing “invisible comforts of daily life.”³

So does simplicity and function make for good design? Let’s take an object that exemplifies minimalism, monotony, and comfort: toilet paper. It is clean, white, and soft; a long strip of paper bundled in a neat roll that stretches out to serve a menial task and does so without us ever questioning its form. What more could one want out of this plain, servile object? One could opt for a quirk—you can pick your color, play Sudoku, or even read comics printed on the roll.

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But have we ever stopped to think about where toilet paper comes from and where it goes after we are done with it? A product used by Chinese royalty in the 6th century now clogs our plumbing systems and contaminates sewage with excess bleach.⁴ It takes virginial wood pulp of 54 million trees, chemicals, and insurmountable amounts of electricity and water to match a year’s worth of a country’s toilet paper consumption. Although the per capita consumption of toilet paper in North America is much higher than the rest of the world, the

adoption of Western lifestyles in developing countries is driving an increase in the product's use, therefore critically impacting forest cover worldwide.⁵

Would it not be better for us to replace toilet paper with a modern hygiene device such as the electronic or handheld bidet accepted in Europe and Asia? The water dispensed by the bidet is a mere fraction of the amount that goes into manufacturing and recycling of the paper roll.⁶ The form of the toilet paper does follow its function; it performs the function we have chosen to assign to it. One function may have many forms, and we choose the one we deem is appropriate and acceptable.

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In *The Evolution of Useful Things*, Henry Petroski notes: “Every artifact is somewhat wanting in its function, and this is what drives its evolution.” According to Petroski, form follows failure and necessity is no longer the driving force behind invention, it is luxury.⁷ When existing things fail our expectations in their convenience and economy, they leave something to be desired. But we are not far from a time when frugality will become a necessity; we might not have the luxury of resources to dictate the terms of objects around us.

Every object is designed by keeping certain parameters in mind—be it function, convenience, culture, or resources. Architect Christopher Alexander in his *Notes on the Synthesis of Form* emphasizes that we are able to declare success only when we can no longer find points that fail to conform to the parameters that we set to judge an object.⁸ In our material world, it is vital for us to constantly reassess the

shortcomings of our designed environments. For the Chinese imperial courts, wood and water were never of concern; they were unlimited natural resources waiting to be technologically exploited. Today they are some of the most crucial commodities dictating the global economy.

Petroski goes on to write: “Since nothing is perfect, and, indeed, since even our ideas of perfection are not static, everything is subject to change over time.”⁹ How we inform our ideas of perfection and luxury, and consequently the parameters for designed objects, is up to us. Would changing over from toilet paper to bidet cause discomfort? Yes, maybe. But we go through that temporary discomfort every day when we choose to adapt to a new technology or even a different mattress. Experimental American architect, Lebbeus Woods, once said that design “should be judged not only by the problems it solves but by the problems it creates.”¹⁰ Our failure to accept responsibility towards our environment may result in the failure of mankind. And thus, the demise of the toilet paper is imperative.

Endnotes

1. Louis H. Sullivan, “The Tall Office Building Artistically Considered,” *Lippincott’s Magazine* 57 (1896): 403-409.
2. Alice Rawsthorn, “The Demise of ‘Form Follows Function,’” *New York Times*, May 30, 2009.
3. Kenya Hara, “What Happens Naturally,” in *MUJI* 137, ed. Kenya Hara (New York: Rizzoli, 2010).
4. Joseph Needham, *Science and Civilization in China: Chemistry and Chemical Technology*, vol. 5-1 (Cambridge: Cambridge University Press, 1985).
5. Noelle Robbins, “Flushing Forests: The Pursuit of Hygienic Elimination Is Eliminating a Lot of Forest,” *World Watch*, May 1, 2010.
6. The production of each roll requires an average of 37 gallons [140 liters] of water. The average American uses 57 sheets of toilet paper per day, which takes 3.7 gallons of water [14 liters] to manufacture. This compares to about 0.03 gallons [0.01 liter] per use of the bidet. “Wipe or Wash? Do Bidets Save Forest and Water Resources?,” *Scientific American*, December 16, 2009, <http://www.scientificamerican.com/article/earth-talks-bidets/>.

7. Henry Petroski, "Form Follows Failure," in *The Evolution of Useful Things*, ed. Henry Petroski (New York: Knopf, 1992).
8. Christopher Alexander, *Notes on the Synthesis of Form* (Cambridge: Harvard University Press, 1964).
9. Petroski, "Form Follows Failure."
10. Zaha Hadid and Nigel Coates. "Lebbeus Woods, Visionary Architect of Imaginary Worlds, Dies in New York." October 31, 2012.

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