



# The LEGOfication of the World

"When we said 'rebuild the world', we didn't mean it as a metaphor. We meant it literally." – *LEGO CEO Sofie Lund, 2050*

Nobody could have predicted it in 2030, when LEGO was just another toy company fighting to stay relevant in a market flooded with screens, apps, and AI-powered entertainment. Back then, the company was barely holding on — digital games had eaten into sales, children were spending more time in virtual worlds than on the floor building castles, and LEGO's sprawling product catalog was chaotic. Too many sets, too many licenses, too much plastic. But LEGO had one thing no competitor had: a philosophy. ***Everything can be built, if you have the right bricks.***

The turning point came in the early 2030s, when climate regulations and 3D printing technologies collided with consumer demand for personalization. LEGO scientists developed **BioBrick™**, a fully recyclable, plant-based material with the strength of steel and the flexibility of rubber. And then came **MacroBricks™** — structural bricks large enough to build furniture, walls, even entire houses.

That's when LEGO stopped being a toy company — and became an infrastructure company.

By 2045, people no longer thought of LEGO as "something for kids." It was simply the **default building system of the world**. Need a new home? You ordered it from LEGO, not a construction company. Need a car? You bought a modular electric chassis and selected your own body panels from the **LEGO Mobility Store**.

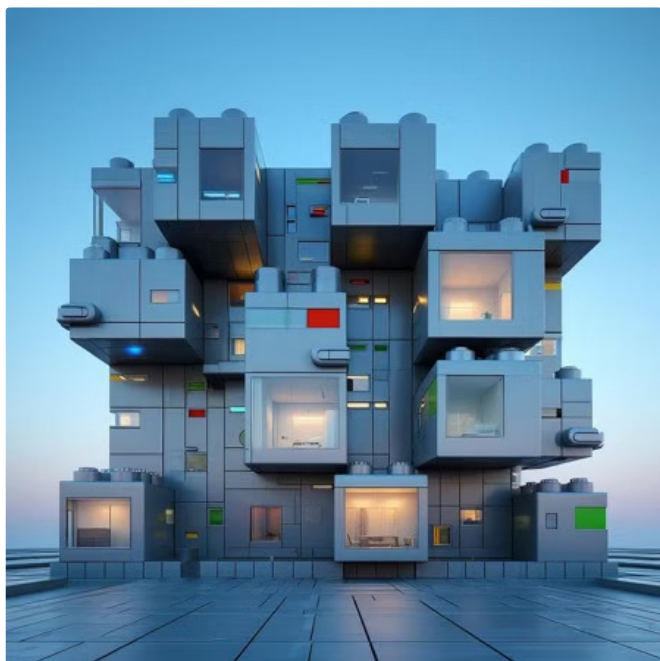
Everything was made of interlocking components — not just homes and vehicles, but consumer electronics, furniture, even urban infrastructure.

# When Everyone Became a Builder

LEGO's shift to **open-source design libraries** changed everything. Suddenly, citizens weren't just *consumers* — they were *designers*. Teenagers uploaded house plans that became global bestsellers. Retirees designed modular public spaces. Disabled users created adaptive car interiors that were adopted worldwide.

The first **LEGO Modular Power Plant™** was installed in Denmark in 2048,

With **LEGO Cloud**, designs were shared, remixed, and improved by the community, then automatically validated for safety by AI before production. The result was a world that looked wildly diverse — no two **LEGO houses** were exactly alike — but everything was still compatible.



LEGO houses are never exactly alike — but all their parts are still highly compatible. Lego residential building in Copenhagen, Denmark

Mira, a 14-year-old from Helsinki, lived in a house she had co-designed with her friends. Its walls were bright teal and had movable panels that could be rearranged depending on her mood.

Yesterday, she and her father had turned their living room into an indoor climbing wall using bricks borrowed from the **local LEGO Library**. Today, she was working on something bigger: a **LEGO Rover™** for exploring the Lapland wilderness.



LEGO Rover™ – modular do-it-yourself car

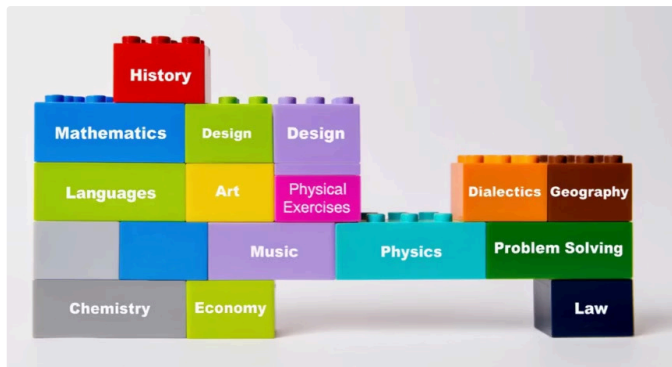
She had downloaded a chassis design from a robotics collective in Nairobi, swapped the wheels for tracked modules from a Canadian snow-vehicle project, and added her own cabin design. In three days, a local LEGO MicroFactory would print the parts using BioBrick filaments, and she'd be driving it by the weekend.



LEGO Rover™ – all modules needed in one image

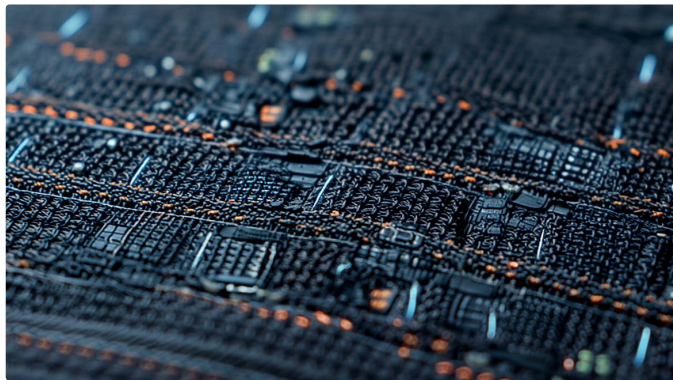
The economic impact was staggering. Traditional manufacturing shrank, but creativity-based employment exploded. **Designers became the new artisans.**

# The Age of Modular Thinking



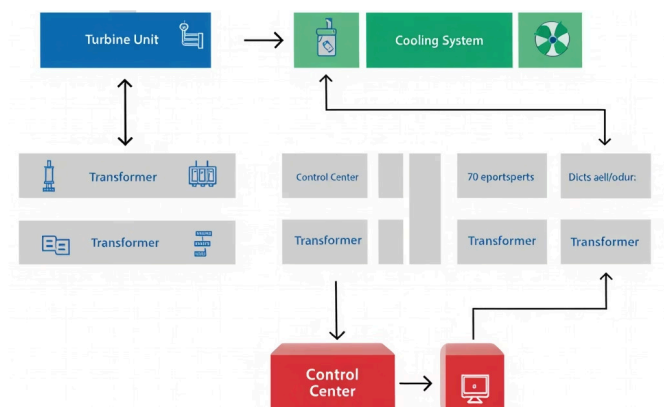
Education evolved beyond studying math, language, and science — toward **modular thinking**: breaking problems into parts, remixing them, and weaving knowledge into creation. This shift encouraged people to think across boundaries, **turning specialists into modern polymaths** and sparking innovation at the intersections of fields.

LEGO cities became more resilient, too. When floods hit Rotterdam in 2052, entire neighborhoods were saved by quickly assembled **MacroBrick barriers**. Modular by design, these massive blocks locked together within hours, forming protective walls that kept the rising waters at bay and turned a potential disaster into a story of urban ingenuity.



Fashion joined in too — clothes are now made from **SoftBricks™**, textiles with built-in connectors that let wearers snap on decorative patterns, sensors, or even exoskeleton frames. Dresses could light up with data-driven designs, and everyday clothing doubled as health monitors or strength-enhancing gear.

When a power plant in Osaka malfunctioned, technicians swapped out faulty modules like changing batteries. Instead of shutting the grid down for weeks of repairs, **standardized energy blocks** were pulled out and replaced within hours, a model of resilience that turned maintenance into something as simple as plug-and-play.



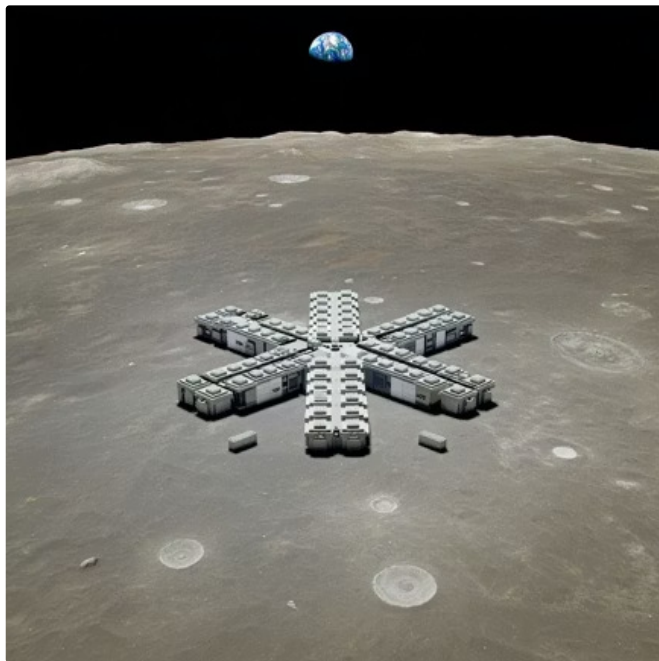


# Beyond Earth

By 2060, LEGO's biggest project wasn't even on Earth. The company had partnered with the European Space Agency to design **modular lunar habitats**, using regolith-based bricks that could be printed on the Moon.

The dream was simple: astronauts would land, print bricks from local soil, and assemble living quarters just like kids building forts on the carpet.

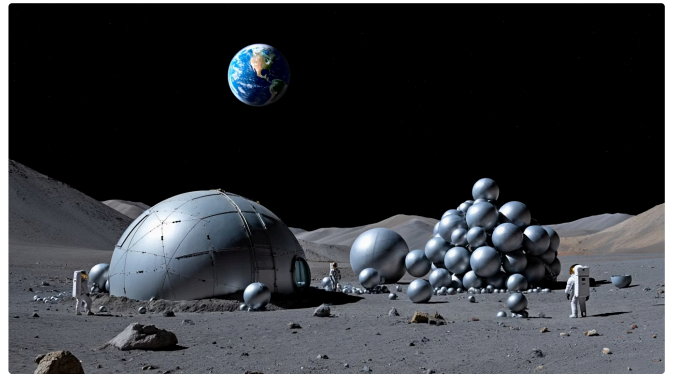
The slogan practically wrote itself:  
"If we can build it on the Moon, we  
can build it anywhere."



LEGO **modular lunar habitats**, Land – Print – Assemble: Moon building is as easy as a game.

Supporting the astronauts were modular robots — **swarms of separate spheres**, large and small, each with its own onboard intellect. These robotic "balls" rolled across the dusty plains, communicating with one another like cells in a living organism.

When needed, they could snap together in seconds to form whatever structure the moment demanded: a car to ferry an astronaut across the crater, a table for field experiments, or even a bridge spanning rough lunar terrain.



Modular robots — swarms of separate spheres, large and small, each with its own artificial onboard intellect.

And because of their modular design, LEGO had given these robots the ability to adapt and evolve over time, learning new configurations instead of remaining locked in a single, fixed construction. They weren't mere tools; they were **partners in creation**, adaptive and alive in their collaboration.

The chaotic toy company of the 2020s had become the backbone of a modular civilization. And somewhere in Billund, where it all began in 1932, the LEGO Idea House had been turned into a museum showing the first bricks ever made — humble, imperfect pieces of plastic that started a cultural and technological revolution. The world had, quite literally, been rebuilt brick by brick.



# Already Emerging

Modularity is entering daily life and business. In construction, Boxabl in the U.S. ships **foldable houses** that arrive on trucks and unfold within hours.<sup>1</sup> Shipping containers are being repurposed into housing blocks, cafés, and office hubs. EverBlock Systems supplies giant, **reusable bricks for walls, furniture, and entire event spaces** that can be dismantled and rebuilt with ease.<sup>2</sup>

Electronics show the same direction. The German SHIFTphone allows users to **replace parts instead of discarding** the whole device, stretching its life and reducing waste.<sup>3</sup> Earlier prototypes such as **PuzzlePhone or Google's Project Ara** may not have reached mass adoption, yet they revealed how phones could exist as collections of components rather than sealed units.<sup>4</sup>

Workplaces and public services are being reimagined through mobility and reconfiguration.

Companies like Mobile Modular and Triumph Modular deliver **classrooms, healthcare facilities, or offices that expand and contract with changing needs.**<sup>5 6</sup>

Belgium-based Gablok took inspiration from LEGO bricks and came up with an innovative house kit, which includes insulated wooden bricks, beams, lintels, as well as a customized floor system.<sup>7</sup>

Framery produces movable **office pods**, offering privacy and flexibility in shifting work environments.<sup>8</sup>

Even nuclear reactors get modular — Valar  
Atomics builds compact, high-temperature  
micro-reactors designed for direct industrial  
use, not the grid.<sup>9</sup>

These cases mark a shift from fixed products to adaptable, regenerative systems — lowering costs, extending lifecycles, enabling personalization, and inspiring modular, creative, and resource-attuned thinking.



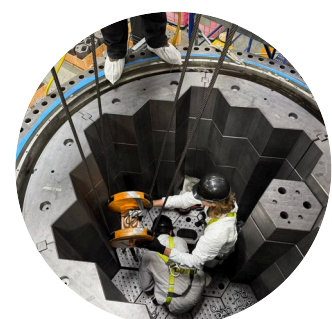
SHIFTphone

The German SHIFTphone allows users to **replace parts instead of discarding** the whole device, stretching its life and reducing waste.



# Gablok

**Belgium-based Gablok** took inspiration from LEGO bricks and came up with an innovative house kit, which includes insulated wooden bricks, beams, lintels, as well as a customized floor system.



## Valar Atomics

**Valar Atomics** builds compact, high-temperature modular micro-reactors designed for direct industrial use, not the grid.

## SOURCES

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