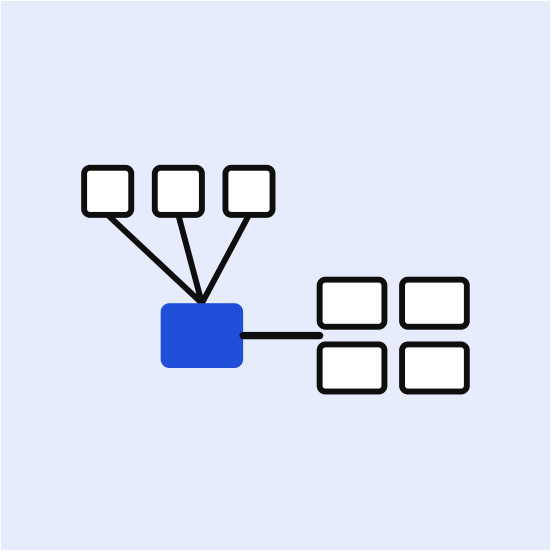
Discipline

Computational design

Designs by defining computational processes (rules, parameters, data and simulations) that generate and evaluate solutions, instead of drawing each form by hand.



In Spanish
Diseño computacional

Origin
Spread by Maeda (1999) and Menges and Ahlquist (2011)

What it deals with

Some problems have too many variables to solve by drawing: computation makes it possible to explore and compare many options.

Principles

Design the process
You define rules; the form comes from them.

Simulate
Test the behavior before building.

Explore variants
Generate many options and choose with judgment.

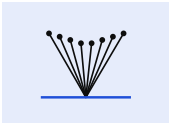
Applications in design

✓ Use it like this
Use it when there are many variables to balance or many variants to produce.

✗ Avoid
Confusing it with using a drawing program.

👁 Don't fall for it
The algorithm also has assumptions: check which criteria you gave it.

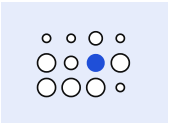
Especialidades



Specialty

Algorithmic design

Uses algorithms as a design tool to explore forms that are hard to imagine by hand.



Specialty

Generative design

Writes rules that generate many variants of a form, instead of drawing just one.



Specialty

Parametric design

Defines a form with measurements that depend on each other; change one and the rest adjusts.

Connections

Related to

- Industrial design
- AI design

Authors and works

1999	**John Maeda**	Taught visual designers to program with a simple language made for them.
2011	**Achim Menges and Sean Ahlquist**	Collected the foundational texts of computational design, from mathematics to biology and systems theory.

Sources

Original sources

- Maeda, J. (1999). Design by numbers. MIT Press.

Academic reviews

- Menges, A., & Ahlquist, S. (Eds.) (2011). Computational design thinking. Wiley.

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